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STERILITY DUE TO OVARIAN DYSFUNCTION*

BY

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(*With Special Plate*)

During the last four years more than 10 per cent. of the women admitted to the Women's and Samaritan Hospitals complained of sterility. As the result of investigation and treatment less than 20 per cent. have become pregnant. These statistics demonstrate the prevalence of the condition, and the poor results attending its treatment confirm those of most authorities and justify my bringing forward a subject which has long been a gynaecological "bone of contention."

TABLE I

Number of admissions (1930 to 1933 inclusive)		6,773
Number of patients complaining of sterility (excluding those in whom the symptom had been present for less than two years)		654
Primary sterility	532	
Secondary sterility	122	
Patients traced since leaving hospital (none of these had tubal occlusion)		72*
Patients who have become pregnant		14*

* These statistics were obtained by Dr. J. Polonsky, to whom I am indebted for permission to use them.

Since the rational treatment of any symptom depends on its cause, it is probable that the unsatisfactory results obtained by all workers in this field are due to a defect in our knowledge concerning its aetiology. This communication is therefore based on the causation of sterility in 654 consecutive patients complaining of this trouble. All cases in which the condition had been present for less than two years are excluded. These cases are classified according to their aetiology in Table II (p. 346). In many patients more than one possible causative factor was present, but for the purposes of this table an attempt was made, in every case, to assess the most important abnormality. An obvious defect is the absence of any figures regarding the male partner in sterile marriages. This omission is the result of the difficulty of obtaining such particulars among the hospital class of patient. In an attempt to nullify this deficiency, figures published by Stein and Leventhal[1] are appended.

The main function of this table is to show that, even allowing for male defects, no cause for sterility was found in a large percentage of cases. Moreover, in many of those patients in whom an abnormality was demonstrated, there is no explanation why the particular lesion present precluded conception. There is no doubt as to the cause of sterility in the first five groups of Table II, and there are good grounds for assuming that the pathological conditions found in Groups 6, 7, and 8 were, in *some* instances, responsible for the complaint. However, it is with Groups 12 to 15 that this paper is mostly concerned. In those either no cause was found or there was present some lesion or symptom the mechanism of which, in preventing conception, is but little understood.

Since Rubin introduced his method for testing the patency of the genital tract very little advance has been made in either diagnosis or therapy, and the existence of so many inexplicable sterile matings is a reflection on the science of gynaecology. I believe with Novak[2] that "it is possible that our helplessness in this great problem is the outcome of too much attention to anatomical defects and too little to a possibly perverted physiology." Consideration of sterility from this point of view immediately focuses attention on the ovary. If some abnormality in spermatogenesis is present in 10 to 20 per cent. of cases, it is more than likely that an equal, if not greater, number are due to the absence of ovulation. In most English textbooks some interference in the formation and liberation of ova is casually mentioned as a possible factor, but until recently the possibility has never been viewed seriously, nor in this country have there been any attempts to assess its importance. As an introduction to a consideration of ovarian dysfunction it is necessary to review the modern conception of the normal ovarian and uterine cycles.

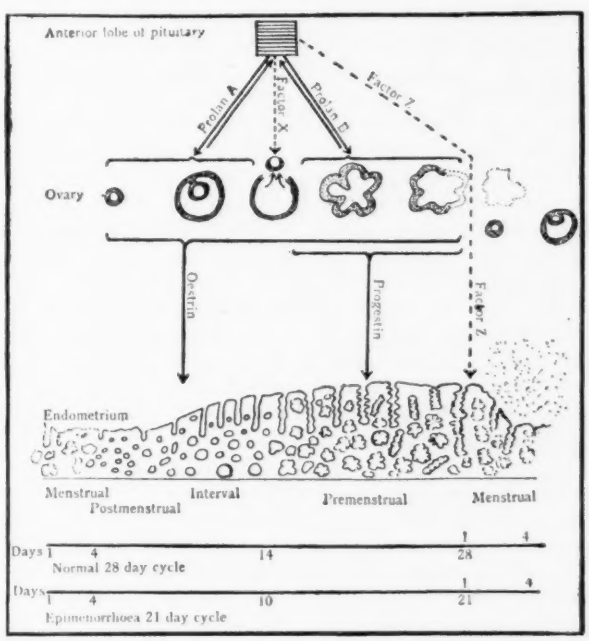

FIG. A.—Ovarian and uterine changes during twenty-eight-day (normal) and twenty-one-day (epimenorrhoea) cycles.

Normal Physiology

Although great strides have been made during the past few years in the elucidation of female sex physiology many points are still a matter of discussion. For reasons of simplicity the following description omits all mention of alternative views and theories.

* Paper read at a meeting of the Liverpool Medical Institution, December 6th, 1934.

TABLE II

Group	Cause	Primary Sterility	Secondary Sterility	Total	Percentage	Additional Lesions and Comments	Cystic Ovary Present
1	Tubal occlusion ... ... Pyogenic infection ... ... 88 Tuberculous infection 11	77	22	99	15.0	Uterine retrodisplacement ... ... 22 Fibromyomata uteri 2	14
2	Disorders of coitus ... ... Semen not retained ... ... 2 Dyspareunia 52	50	4	54	8.3	Irregular menses ... ... 2 Acute anteflexion of cervix ... ... 11 Prolapse of ovary 2	2
3	Vaginal discharge due to endocervicitis (15), cervical polyp (5), etc.	15	10	25	3.8	Uterine retrodisplacement ... ... 2 Cochleate uterus ... ... 1 Prolapse of ovary 1	1
4	Gross malformations of genitalia ...	4	1	5	0.6	—	—
5	Tuberculous endometritis	1	0	1	—	—	—
6	Acute anteflexion of cervix (cochleate uterus)	117	3	120	18.4	Hypothyroidism ... ... 2 Scanty menses ... ... 4 ? Pulmonary tuberculosis 1	6
7	Conical cervix pinhole os, etc.	23	0	23	3.5	Uterine retrodisplacement ... ... 2 Cervical polyp (small) 1	—
8	Uterine retrodisplacement with or without ovarian prolapse	47	18	65	10.1	Hypothyroidism ... ... 1 Hyperthyroidism ... ... 1 ? Pulmonary tuberculosis 2	16
9	Ovarian neoplasms and broad ligament cysts	4	1	5	0.8	—	1
10	Fibromyomata uteri	24	0	24	3.7	Uterine retrodisplacement ... ... 6 Endometrioma 1	4
11	Endometrioma... ... ... Involvement of uterus ... ... 0 ,, one ovary ... 4 ,, both ovaries ... 3 No ovarian involvement 5	10	2	12	1.8	Uterine retrodisplacement 5	—
12	Sterility associated with menstrual upset for which there is no obvious cause	60	21	81	12.3	See Table III	9
13	Uterine under-development	8	0	8	1.2	Uterine retrodisplacement ... ... 1 Primary amenorrhoea ... ... 2 Scanty, infrequent menses 2	—
14	Cystic ovaries with no associated pathology and no menstrual upset	15	5	20	3.1	Small fibroma of ovary 1	20
15	No abnormality found and no alteration in menses	77	36	113	17.3	See Table IV	—
	Total	532	122	654			73

Male factors in sterility (after Stein and Leventhal)

Male defects acting alone	10.7 per cent.
Male defects in addition to female defects	18.1 ,,
Female defects acting alone	71.3 ,,

Figure A is a diagrammatic representation of the monthly cycles which occur in the ovary and in the uterus. The development of the Graafian follicle is brought about by prolan A from the anterior lobe of the pituitary; the formation of the corpus luteum is the result of the action of prolan B, a second pituitary factor. Rupture of the follicle and liberation of the ripe ovum is occasioned by the same gland, but the particular hormone responsible is unknown. It is possibly due to the cessation of prolan A secretion, or more probably the result of the onset of prolan B action, but in the diagram the ovulation factor is denoted separately as X. The ovum is set free between the eighth and the eighteenth day of the menstrual cycle—usually about the twelfth to fourteenth day. After liberation of the ovum the follicle is converted into a corpus luteum, and, in woman, the presence of a functional yellow body usually denotes that ovulation has occurred.

The well-known cyclical changes in the endometrium are the result of two hormones, oestrin and progestin, which are liberated during the ovarian cycle. Oestrin is secreted by the granulosa cells of the developing Graafian follicle and, after ovulation, by the central portions of the corpus luteum. It induces growth of endometrium from the post-menstrual to the interval phase. Progestin is the derivative of the corpus luteum, and produces further enlargement of the endometrial glands, but more especially is responsible for the secretory activity of the endometrium: indeed, it produces those changes which have long been recognized as indicative of the premenstrual phase. The corpus luteum begins to degenerate just before the onset of menstruation.

Uterine haemorrhage is an interesting feature of the cycle, and its cause has aroused great discussion during recent years. It is known that a uterus which has been previously subjected to the action of oestrin, or progestin, or both of these principles, bleeds when it is released from their influence. But the mechanism of menstruation is probably not so simple, and there is evidence to show that removal of these substances from circulation only precipitates haemorrhage indirectly, by stimulating the production of a "bleeding factor" by the anterior lobe of the pituitary. This positive hypophyseal factor, which is responsible for uterine bleeding, is hypothetical, and is denoted in the diagram by Z. There is no doubt that the ovary is not only subjective to the anterior lobe of the pituitary, but its hormones, acting either positively or negatively, in turn affect the motor gland. This conception is denoted in Figure A by the reversed arrows.

From the fourth to the twenty-eighth day the amount of oestrin in the body gradually increases, and reaches its peak immediately prior to the onset of menstruation. It is probable that the liberation of the gonadotropic hormones by the pituitary depends on the amount of follicular hormone (and perhaps progestin too) in circulation; thus when the quantity of oestrin reaches a certain level the secretion of prolan ceases and the corpus luteum immediately degenerates. The sudden decrease in the oestrin content of the body during menstruation is, however, sufficient to stimulate renewed pituitary activity, and thus ensures the ripening of the Graafian follicle of the next ovarian cycle. There is thus a reversible action, which accounts for the interdependent monthly cycles in the hypophysis and gonad. This mechanism is easily demon-

strated by the appearance of large amounts of prolan A in the blood and urine after bilateral oöphorectomy.

I believe that the same type of reversible control is normally present between the anterior pituitary and the thyroid, and perhaps the suprarenals too. I have previously[3] produced evidence of this by demonstrating an increased production of anterior pituitary hormone after surgical removal of the greater part of the thyroid gland.

Sterility Associated with Menstrual Irregularities

Group 12 shows that 12.3 per cent. of the cases of sterility were accompanied by menstrual upset without there being any demonstrable gross lesion to account for either symptom. The menstrual upset varied from amenorrhoea to continued metrostaxis (see Table III). These functional disturbances, especially those characterized by excessive loss, are invariably associated with endometrial changes which were formerly described as "endometritis," but are now recognized as perversions of the normal cycle, many cases presenting the features of "hyperplasia." The endometrial pathology, whether it be described as endometritis or by some term such as hyperplasia, is said to produce sterility since it interferes with implanation of the ovum. This explanation, which has been handed down from one authority to another, is unsupported by any evidence, and is entirely unscientific. Consideration of the causes of menstrual irregularity makes it quite clear that there is a much more convincing reason for sterility.

The type of menstrual cycle does not necessarily indicate the behaviour of the ovary; thus it is possible for conception to occur during a period of amenorrhoea. Nevertheless, in spite of one or two opinions[4] to the contrary, most observers believe that the uterine cycle is usually some index of ovarian activity. Further, in certain very definite forms of menstrual irregularity, it is possible to deduce the underlying ovarian abnormality. Yet the converse of this is not true, and it is by no means rare to see examples of obvious ovarian dysfunction without there being any change in the normal cyclical loss from the uterus. This is amply proved by the cases in Group 14, for no fewer than twenty patients had cystic ovaries without there being either an associated lesion or any menstrual upset.

The several varieties of menstrual abnormality encountered in Group 12 are shown in Table III, and each variety will be considered in detail.

TABLE III.—*Sterility Associated with Menstrual Upset. (No Gross Pathology Present)*

Number of Cases	81
Primary sterility	60
Secondary sterility	21
(9 patients had had abortions only.)	
Types of Menstrual Upset:	
Secondary amenorrhoea	4
Scanty menstruation	4
Infrequent menses with periods of amenorrhoea	12
Epimenorrhoea	5
Epimenorrhagia	13
Menorrhagia	19
Metrostaxis (preceded by amenorrhoea in 14 cases)	24
Cystic ovary was present in 9 patients (all complaining of excessive loss.) Tubal patency determined in 53 cases.	
Additional Lesions which may have had some Bearing on Sterility:	
Acute anteflexion of cervix	15
Uterine retrodisplacement	11
Rigid introitus (dyspareunia)	4
Conical cervix, pinhole os, etc.	3
Erosion of cervix	2
Vaginitis	1
Small fibromyoma uteri	1
Small vaginal septum	1
History of syphilis	1
Thyroid dysfunction	2

SECONDARY AMENORRHOEA AND INFREQUENT MENSES

In these conditions liberation of the bleeding factor of the anterior pituitary is temporarily suppressed. This suppression is invariably associated with, and probably caused by, some disorder in the secretion of the other gonadotropic and the ovarian hormones. If the amenorrhoea is of long standing, the underlying pathology is a deficient stimulation of the Graafian follicle by prolan A. Hence follicular ripening, rupture, and corpus luteum formation do not occur. The endometrium, therefore, lacks the influence of either of the ovarian hormones, and presents atrophic features. But it is quite obvious that the endometrial atrophy is not responsible for sterility; it is the absence of follicular ripening and ovulation.

Amenorrhoea of shorter duration may be brought about by a different mechanism. If prolan A is secreted for a longer period than normal, or if the ovulation factor (X) is absent, then the oestrous phase is prolonged (see Fig. 1 on Plate), and until the oestrin influence is withdrawn no uterine haemorrhage occurs. More commonly, the mechanism is one whereby excessive stimulation of the ovary by prolan B leads to persistence of the corpus luteum, frequently in the form of a cyst. Amenorrhoea due to persistence of the luteal phase is recognized by the continual premenstrual appearance of the endometrium (see Fig. 2 on Plate).

Prolongation of the oestrous, or luteal, phases always induces a temporary cessation of the ovarian cycle, and ovulation does not occur until the persisting endocrine tissue of the ovary ceases to function. Hence, in these cases it is the non-liberation of ova for shorter or longer periods which results in sterility.

METROSTAXIS

The majority of cases included under this heading are examples of the disease, unfortunately named, metropathia haemorrhagica. Figure B represents a diagrammatic conception of this disease. The essential feature is that ovulation does not occur for long periods of time. The Graafian follicle, instead of rupturing, continues to grow; the ovum dies, but the granulosa cells remain active, and a follicular cyst is formed. During this time the endometrium is subjected to prolonged and intensive stimulation by the follicular hormone. It becomes, therefore, unduly thickened, and presents an exaggerated interval picture—the classical appearance of endometrial hyperplasia.

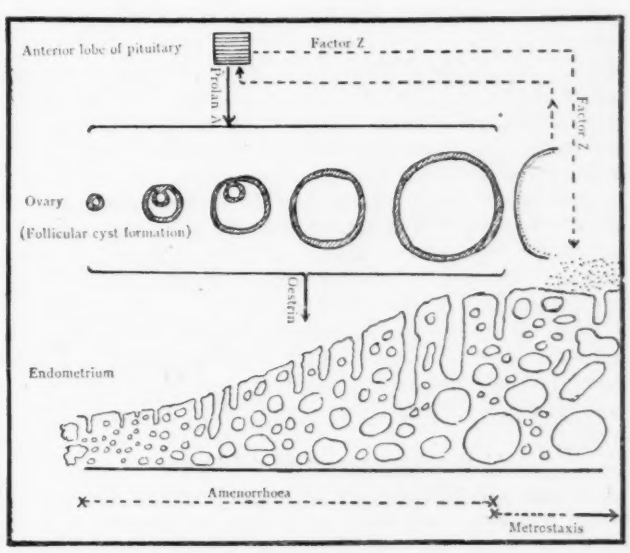

FIG. B.—Metropathia haemorrhagica.

After the elapse of a varying length of time bleeding commences. This is, no doubt, instituted by the pituitary factor (Z), which is affected by a decrease in the amount of oestrin in the body—this decrease resulting from degenerative changes in the granulosa cells lining the follicular cyst. The haemorrhage may persist for weeks or months, and, if it should cease, tends to recur. For diagnostic purposes the main feature of this disease is an endometrium which, although bleeding, has had no previous stimulation by a corpus luteum, and therefore shows no secretory activity, which is so characteristic of the premenstrual or menstrual phase. It is quite obvious that sterility in these patients is not due to endometrial hyperplasia, but to the absence of ovulation. Indeed, if ovulation should occur, then the hyperplasia would inevitably disappear.

MENORRHAGIA

There is evidence to show that menorrhagia is in many instances brought about by the same mechanism as is metrostaxis—that is, it is a form of anovular menstruation (see Fig. 3 on Plate).

EPIMENORRHOEA AND EPIMENORRHAGIA

Fig. A demonstrates the underlying pathology which is present when this symptom is manifest. The cycle is normal in every way, except that it is shortened in length, each phase being diminished proportionately. Ovulation does occur; indeed, two or more follicles may ripen simultaneously. There is therefore no apparent reason why these patients should be sterile, and this argument is substantiated by facts, since it is established that this type of excessive menstrual loss is much less frequently accompanied by sterility than is any other.

SCANTY MENSTRUATION

The significance of this symptom is as yet unknown; a primary under-activity of the hypophysis is probably responsible.

From these remarks it is apparent that, with the exception of epimenorrhoea, infrequent or absent ovulation is a constant feature of most menstrual irregularities. If statistical proof of this be needed it is supplied by Anspach and Hoffman,[4] who recently reported that of a series of women suffering from various types of excessive menstrual loss two-thirds presented no evidence of ovulation. These observations should dispel any doubts as to the real cause of sterility in Group 12 of the cases under discussion.

Cystic Ovary without any Additional Lesion or Related Symptoms

In twenty women (Group 14) the only abnormality present was a cystic ovary, the cyst(s) in most instances being follicular in type. Such cysts in the absence of local lesions (for example, salpingo-oöphoritis) are almost certainly the result of a primary pituitary derangement. The presence of these cysts frequently, but not necessarily, means that ovulation is suppressed. It is for this reason, and not by way of any anatomical displacement resulting from the presence of the tumour, that sterility results. It is interesting to note that cystic ovaries were found in some of the cases included in other groups (see Table II), and I suggest that, with the exception of Group 1, their presence was of far greater significance than the more obvious lesion under which the cases were classified.

Under-development of the Uterus

A uterus the dimensions of which are smaller than normal has long been held to prevent conception. May I draw attention to views expressed by Bonney[5] several years ago: since implantation of a fertilized ovum occurs with comparative ease in a narrow Fallopian tube, or in a rudimentary uterine horn, it is unreasonable to suppose that a uterus, on account of its small size, hinders pregnancy. The true explanation lies in the fact that the uterine under-development is merely a sign of ovarian (and pituitary) under-activity, which, beginning in early life, persists in the adult, and is frequently manifested by the absence of any gonad cycle.

Sterility in the Absence of any Gross Lesion or Associated Menstrual Irregularity

Under this heading come 17.3 per cent. of the cases, and in view of the results of treatment I feel that it would be more correct to transfer to this section many of those patients at present included in Groups 6, 7, and 8. No doubt a considerable number of these sterile matings were the fault of the male partner, but there remain many where no male or female cause was apparent. Incompatibility is an easy but unconvincing escape from defeat. Vitamin deficiency may be the responsible factor on an insignificant number of occasions.

TABLE IV.—*Sterility in the Absence of any Gross Lesion or Associated Menstrual Irregularity*

Number of Cases	113
Primary sterility	77
Secondary sterility	36
(9 patients had had abortions only.)	
Tubal Patency	95
Additional Symptoms:	
Dysmenorrhoea	34
Slight dyspareunia	18
Slight vaginal discharge	7
Obesity (probably of endocrine origin)	3
Previous history of menorrhagia	2
Additional Lesions possibly having some Bearing on Sterility:	
Slight delay in passage of air through tubes	4
Small cervical erosion	5

In one case there was a familial history of sterility. One patient had had children by her first husband, but not by the second.

It was emphasized earlier in this paper that ovarian dysfunction does not necessarily produce any menstrual change. In view of this I suggest that some fault in, or absence of, ovarian rhythm is the most likely cause of the otherwise inexplicable sterility encountered in this group of the series. The truth or fallacy of this suggestion depends on the existence, or otherwise, of normal menstruation without a corresponding follicular cycle in the gonad. Many surgeons have occasionally noted, during abdominal operations, the absence of any corpus luteum immediately prior to menstruation. There can therefore be no doubt that anovular menstruation can occur, but the question which has recently given rise to much heated discussion is: How prevalent is the phenomenon?

Corner[6] and Hartman[7] demonstrated that anovular cyclical bleeding is exceptionally common in some species of monkey, and many American workers, led by Novak,[8] have continually urged that anovular menstruation may not be rare in the human. In the British Isles very little has been done to solve this problem, although Shaw[9] has doubted its existence. It is not easy to obtain statistics on this point, since it is rare for the uterus or endometrium to be removed from patients with regular menses. However, I have recently examined slides of endometrium from 150 patients. These were consecutive in so far that only those cases presenting regular twenty-eight-day cycles with normal loss were accepted. Comparison of the histological features with the date of the last menstrual period constituted an essential feature of the investigation. Sixty-three specimens were obtained during the menstrual or premenstrual phase (twenty-first to twenty-eighth days), yet only forty-seven showed any evidence of having been subjected to the influence of a corpus luteum. In other words, the remaining patients

had not ovulated during the cycle preceding operation (see Fig. 4 on Plate). Curettage was performed during the interval phase on sixty-nine occasions, so in these cases a corresponding endometrial picture is of no significance. Nevertheless, nine of these sections revealed hyperplasia.

These findings show that at least 25.4 per cent. (sixteen out of sixty-three) women admitted to a gynaecological ward had anovular menstruation. This figure is very striking, and, although it may not represent the state of affairs found in normal healthy women, it is possible that it under-estimates the frequency of pseudo-menstruation among women complaining of sterility. Evidence in favour of this view is provided by Mazer and Ziserman,[10] who found that 58.5 per cent. of women complaining of functional sterility had anovular cycles. Moreover, Anspach and Hoffman[1] recently reported anovular menstruation in 21.4 per cent. of women presenting such symptoms as obesity, sterility, etc., but having regular uterine haemorrhage.

The final proof of my contention would be to supply full details as to the frequency of anovular bleeding among the 654 patients investigated. Unfortunately this is impossible, since the endometrium was examined in forty-two instances only. This is no reflection on the staffs of the hospitals concerned, since most of the cases under discussion were examined and treated at a time when the possibility of such ovarian dysfunction was not fully realized. Previously it has been the universal custom to avoid curettage wherever possible in these cases, because it is of no value as a therapeutic measure and it entails the risk of spreading infection to the upper part of the genital tract.

I submit that the risk attending light diagnostic curettage is so slight as to be completely overshadowed by the valuable information derived from the procedure. Twenty-one of the forty-two women whose endometrium was examined were in the premenstrual or menstrual time of the cycle when curetted, and ten of them (50 per cent.) showed no endometrial secretory activity—that is, they had anovular menstruation. Five of these examples of absent ovulation occurred in Group 12, and three in Group 15. In a few cases typical hyperplasia was present.

These statistics suffice to demonstrate the existence of this ovarian disorder in sterile women, but the numbers are too small to give an estimate as to its frequency. It is for this reason that I wish this paper to be regarded, not as absolute proof of a partly theoretical supposition, but as an appeal for an alteration in the present-day methods of investigation of sterility, with a view not only to improving diagnosis and treatment, but to obtaining data which can only be accurate if they deal with a sufficiently large number of cases.

Proposed Method of Investigation

1. *Huhner's Test.*—Examination of the semen should be carried out in all cases, and, in spite of the practical difficulties in a hospital practice, it is possible in most cases if it is performed by the post-coital test introduced by Huhner.[11]

2. *Tubal insufflation* with air or carbon dioxide.

3. *Curettage.*—The diagnosis of ovulation necessitates examination of premenstrual or menstrual endometrium for evidence of corpus luteum activity. It is therefore essential that curettage should be performed not earlier than the twenty-first day of a twenty-eight-day cycle. The admission of patients to hospital or nursing home must be arranged with this object in view. With the patient anaesthetized, insufflation is performed immediately prior to curettage. Should menstruation have begun when the patient is admitted there is no need to postpone operation, as is so frequently done. Proceed with the curettage, but avoid insufflation ; the patency of the tubes can then be demonstrated by the passage of air or lipiodol, without anaesthesia, before the patient leaves hospital, and as soon as all bleeding ceases.

4. *Dilatation of Cervix.*—After curettage dilatation of the cervix should be performed as a therapeutic measure, since cervical stenosis or distortion is a frequent factor in sterility. Such additional procedures as posterior cervical section may be carried out, but not if insufflation has been postponed. Once posterior cervical section is performed, then insufflation becomes very difficult, since the cannula will not fit the cervix accurately.

In addition to these tests an important feature of the investigation should be a careful inquiry into the menstrual history of the patient. Premenstrual curettage is the simplest and most reliable method of diagnosing anovular menstruation, but another device was described recently by Katzmann and Doisy,[12] and also by Kurzrok and his colleagues.[13] These workers claim that it is possible by means of a daily examination of blood or urine to demonstrate a rise in the anterior pituitary hormone content about the time of ovulation. Kurzrok and his colleagues showed that anovular menstruation can be diagnosed by noting the absence of this characteristic rise. This work, which still awaits confirmation, entails difficult and repeated biological assays. Nevertheless it may prove of value, since it allows the determination not only of the occurrence of ovulation, but of the exact day on which the ovum is set free.

Treatment of Sterility due to Absence of Ovulation

Faults in the ovulatory mechanism may be spontaneously rectified, or sometimes any local interference, such as dilatation of the cervix, may suffice to correct a temporarily disordered rhythm. However, it is unjustifiable to rely on the occurrence of this happy result. No matter what may be the underlying fault in the mechanism, it is always an anterior pituitary hormone which is lacking. The various factors secreted by this gland have never been isolated one from each other, so that in treating these cases one is at present forced to administer a pituitary preparation* which probably contains all principles. This simplifies treatment, but is hardly satisfactory. It is impossible as yet to assess the value of treatment on these lines, because the existence of this type of sterility has not long been recognized. Nevertheless, I am tempted to quote a recent case about which I was consulted ; at the same time I realize that if one accepts the evidence of a single case one can prove the value of any type of therapy.

The patient, aged 34, had been married six years, and during that time had had several typical attacks of metropathia haemorrhagica. Medicinal therapy and curettage had failed to stop the excessive loss, and, finally, in spite of the fact that she complained of sterility, she was given deep *x*-ray therapy to the ovaries ; this she had had on and off for two years. When I first saw her some months ago metrostaxis had commenced once more, and she was extremely worried by the fact that she had never become pregnant. The right ovary was palpably cystic. Following the recognized treatment of this ovarian disorder, I prescribed a course of injections of antuitrin "S" (Parke, Davis and Co.). Bleeding not only ceased immediately, but within one month conception occurred. Unfortunately she recently aborted at the sixteenth week of pregnancy.

Another form of attack advocated is the stimulation of the pituitary by small doses of *x* rays. I have so far hesitated to adopt this procedure, since it is obviously fraught with some risk. If experience shows that it is without the dangers which would appear to be present, it may prove of greater value than the administration of

* Most preparations are obtained from pregnancy urine, but the hormones contained therein, if not identical, have a similar action to those of the anterior pituitary.

prolan preparations. I adhere to the views put forward by Hamburger[14] and Fluhmann[15]—namely, that the endocrine principles of the placenta and pregnancy urine differ from those secreted by the anterior pituitary. If the theory advanced by Hamburger is true, then in these cases of ovarian dysfunction the best results are likely to follow the stimulation of the patient's hypophysis, with or without simultaneous parenteral administration of prolan from pregnancy urine.

Ovarian hormones are frequently advised in sterility, especially in those cases associated with some underdevelopment of the uterus. It is quite clear that such measures are valueless in the correction of the main fault in the ovary. Oestrin, of course, may increase the size of the uterus and cause endometrial development ; patients with amenorrhoea, if treated with this hormone, may even be induced to bleed, but it is not true menstruation, ovulation is not induced, and sterility persists. Not only is oestrin therapy without value, but I feel certain that it may be harmful in that, if it is continued, it may produce atrophy of the ovary—the least desired result. This view is borne out by animal experiments. Progestin therapy is, for similar reasons, entirely useless as a cure for sterility.

Just as I have quoted a case treated successfully with a prolan preparation, so occasional successes may be ascribed to oestrin or even to progestin. Nevertheless, there is no theoretical basis for such treatment, and very occasional happy results are easily explained by the fact that temporary derangement of ovarian rhythm may be corrected by any form of "shock," or may even correct itself spontaneously.

Any remarks on the subject of the endocrine treatment of ovarian dysfunction would be incomplete without reference to the administration of the active principle of the thyroid gland. This substance has been used extensively in attempts to improve ovarian and uterine development. The foundation of this treatment lies in the well-known clinical fact that scanty menstruation, uterine underdevelopment, etc., are often associated with thyroid underactivity, whereas excessive menstrual loss frequently accompanies thyroid over-activity. It has been assumed that the state of ovarian and uterine activity is directly controlled by that of the thyroid. Recent investigations show, however, that the thyroid gland resembles the ovary in that it is subservient to the anterior lobe of the pituitary. It is therefore probable that under-activity of the thyroid and ovary, when occurring in the same patient, are only related in so far that they are both manifestations of a primary pituitary disorder.

If the conception of pituitary–thyroid relations, outlined earlier in this paper, is true, administration of thyroid is likely to cause further inhibition of hypophyseal activity, with consequent depression, and not stimulation, of ovarian function. It follows therefore, on theoretical grounds, that the administration of thyroid should be reserved for cases of over-activity of the gonads, and should never be used for ovarian and uterine under-development. Personally, I have never seen any good results following thyroid therapy in the latter type of case, and I have discontinued its use in my practice.

I hope I have demonstrated that the non-occurrence of ovulation is, from both theoretical and practical aspects, a factor to be considered seriously as a cause of sterility. It accounts for the majority of those cases in which menstrual upset is an additional symptom, and is probably responsible not only for many of the unexplained sterile marriages, but also for those in which the treatment of some obvious lesion, such as acute anteflexion of the cervix, or retroversion, is unsuccessful. I believe, moreover, that suppression of follicular rupture explains the physiological sterility which is admittedly present in early life and late middle age, for it is at these periods of life that anovular menstruation is most frequently found. Finally, may I mention a view already expressed elsewhere[16]—namely, that sterility associated with fibromyomata and endometrioma is not the result of these tumours: nor is the converse true ; both the neoplasm and the sterility are manifestations of a primary ovarian disorder.

I should like to express my gratitude to the members of the honorary medical staff of the Women's Hospital for permission to report the details of cases—all of which were under their care. It would be unfair, also, if I did not state that this paper is founded for the most part on the work and writings of the American school, which has done much to forward this branch of medicine.

REFERENCES

1. Stein, L. F., and Leventhal, M. L.: *Journ. Amer. Med. Assoc.*, 1932, xcviii, 621.
2. Novak, E.: *Gynaecology*, by H. A. Kelly, 1928.
3. Jeffcoate, T. N. A.: *Lancet*, 1932, i, 662.
4. Anspach, B. M., and Hoffman, J.: *Amer. Journ. Obstet. and Gynecol.*, 1934, xxviii, 473.
5. Bonney, V.: *Lancet*, 1932, i, 971.
6. Corner, G. W.: *Journ. Amer. Med. Assoc.*, 1927, lxxxix, 1838.
7. Hartman, C. G.: *Contrib. Embryol.*, 1932, cliv, 1.
8. Novak, E.: *Journ. Amer. Med. Assoc.*, 1934, cii, 452.
9. Shaw, W.: *British Medical Journal*, 1934, i, 7.
10. Mazer, C., and Ziserman, A. J.: *Amer. Journ. Surg.*, 1932, xviii, 332.
11. Huhner, M.: *Sterility in the Male and Female and its Treatment*, 1913.
12. Katzmann, P. A., and Doisy, E. A.: *Journ. Biol. Chem.*, 1934, cvi, 125.
13. Kurzrok, R., Kirkman, Irene, and Creelman, Margaret: *Amer. Journ. Obstet. and Gynecol.*, 1934, xxviii, 319.
14. Hamburger, H.: *Studies on the Gonadotropic Hormones*, 1933.
15. Fluhmann, C. F.: *Amer. Journ. Obstet. and Gynecol.*, 1934, xxviii, 668.
16. Jeffcoate, T. N. A., and Potter, A. L.: *Journ. Obstet. and Gynaecol. British Empire*, 1934, xli, 684.

SURGICAL TREATMENT OF BRONCHIECTASIS *

BY

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(With Special Plate)

Bronchiectasis is of interest to the surgeon at two stages of its development—when it is incipient and when it is well established. I propose, therefore, to divide my subject into two parts.

Let us first consider the question of prevention, and inquire whether anything can be done in the stage of delayed resolution or early pulmonary fibrosis which follows bronchopneumonia. There is a difference of opinion concerning the mechanics of bronchial dilatation, but its exact pathogenesis does not affect us for the moment. In this pre-dilatation stage anything which diminishes the expanding force, the outward pull, which acts on the weakened bronchial walls will tend to prevent the development of dilatation, whether that force be exerted by contracting fibrous tissue or by the tension of the normal intrapleural negative pressure.

Working on this hypothesis Hedblom used phrenic evulsion extensively in the type of case under discussion. In his hands the operation produced symptomatic cures, which did not relapse and in which lipiodol failed to demonstrate bronchial dilatation. John Alexander[1] has also used temporary paralysis of the phrenic nerve (phrenic crush) in a number of patients, most of them between the ages of 5 and 14, who were suffering from suppurative pneumonitis, before the stage of abscess

* Read before the Manchester Medical Society.

formation or of chronic bronchiectasis, and he has been greatly pleased with the results. Crushing the phrenic nerve aims at the production of paralysis of the corresponding half of the diaphragm for approximately six months. Alexander has found this temporary period long enough to bring about resolution of the pneumonitis.

It may be asked why artificial pneumothorax is not used in order to allow the lung more complete rest than is afforded by phrenicectomy. The answer is that in these suppurative conditions of the lung artificial pneumothorax exposes the patient to the danger of an empyema. Interruption of the phrenic nerve is therefore preferable. I wish to emphasize the fact that I am speaking of phrenic paralysis in the very early stage of bronchiectasis. The case is quite different when the disease is more advanced. Tudor Edwards and Price Thomas[2] mention the curative effect of phrenicectomy in early bronchiectasis when it accompanies an abscess of the lower lobe; but I am not aware that the operation has had any systematic trial in this country in the type of case to which Hedblom and Alexander have devoted attention.

When the condition has become more advanced only a certain number of patients are suitable for operative treatment. Bilateral disease, for instance, is as yet a bar to radical attack. It has been my rule to exercise the utmost conservatism in the selection of cases for operative treatment.

Choice of Method

Logically, well-marked bronchiectasis may be attacked in two ways: by the institution of drainage, or by the ablation of the diseased area. In practice there is a third method which it is necessary to mention, but it has only a limited field of usefulness. It is the attempt to obliterate the cavities by compression from the outside—in other words, the utilization of collapse therapy in one or other of its forms. The following is a summary of the available surgical methods.

Incipient Stage.—Phrenic crush; (artificial pneumothorax).

Well-developed Stage.—(*a*) Drainage: postural, bronchoscopic, external. (*b*) Excision: cautery pneumonectomy (Graham), "cunéo-résection" of Coquelet, "pneumectomie fragmentaire progressive" of Baumgartner; lobectomy. (*c*) Collapse: thoracoplasty; (artificial pneumothorax); (phrenic evulsion). It will be convenient to consider the last of these methods first.

Collapse

Artificial pneumothorax, phrenic evulsion, and thoracoplasty have all undoubtedly given good results in isolated cases, but in general they are unsatisfactory. Collapse therapy finds its logical application in pulmonary tuberculosis, where the natural tendency to fibrosis and contraction of the cavities is hampered by the tension under which the lung is normally kept in a state of partial expansion. In bronchiectasis the case is quite different. The thick-walled dilatations of the well-developed disease gape permanently, and have no such tendency to close by the contraction of fibrous tissue as have those due to the destructive action of the tubercle bacillus.

There is another objection to phrenic evulsion—namely, that the absence of diaphragmatic movement hinders coughing. In practice the results of artificial pneumothorax and phrenic evulsion have not been satisfactory in bronchiectasis.

The position is not quite the same with thoracoplasty, from which good results have been obtained, particularly by Hedblom. In such cases as that shown in Fig. 1 (see Plate), short of total pneumonectomy, thoracoplasty is the only surgical measure open to us. It is true that the whole of one lung has now been successfully removed on several occasions, but the operation is, of course, not practicable in everyday work. If it is used in the treatment of bronchiectasis. thoracoplasty should be graded and extensive—that is, it should be performed in three or more stages, and, usually, the whole length of all the bony ribs on one side should be removed. In the patient whose radiogram is shown in Fig. 2 (see Plate) it was not necessary to excise the twelfth rib.

To sum up, collapse in the form of thoracoplasty, while it is not the ideal operation, has a definite field of usefulness when other methods are not available.

Drainage

The subject of postural drainage has recently been fully discussed by Nelson.[3] I do not intend to say any more than that to hang the patient's head over the edge of the bed for five minutes twice a day is not postural drainage in any modern sense of the term. The method is a valuable one, not only by itself, but in the pre-operative and post-operative management of those cases which are treated surgically.

BRONCHOSCOPY

The pus-containing bronchi may also be cleared by aspiration through a bronchoscope. Bronchoscopy is not pleasant, but neither is it a major surgical operation. Local anaesthesia is sufficient, and aspiration may be performed upon out-patients, who go home after a brief rest.

What is the mechanism of bronchoscopic aspiration? The bronchoscope is not, as some suppose, put into the cavities, though the aspirating tube may reach some of them. The sacculations are situated at the ends of the smaller bronchi. Obviously a 7 mm. bronchoscope cannot be passed into a 2 mm. bronchus. Chevalier Jackson has shown that the smaller bronchi are emptied by what he calls the "tussive squeeze" into the secondary bronchi, and it is from these that the suction aspirator picks up the pus. The effect of cough can be visibly demonstrated after the operation of cautery pneumonectomy, when the open bronchi can be seen to be squeezed during the act, much as a sponge is compressed by the hand.

What can bronchoscopy reasonably be expected to do in bronchiectasis? Ocular demonstration of the immediate effect is easily given by first asking the patient to empty his chest as much as possible by his favourite method of postural drainage. The amount of pus, often very considerable, which can still be sucked up through the bronchoscope is the measure of its additional draining power. The effect is, of course, only temporary. Bronchoscopic aspiration can diminish the amount of sputum and the fetor, which is so unpleasantly characteristic. No one has ever claimed that it can cure the disease, whatever may be the case in localized pulmonary abscess.

Patients vary considerably in their response to bronchoscopic aspiration. Some do not consider the benefits afforded by the treatment worth the trouble of attending for it. My own practice is to aspirate at weekly intervals and to leave it to the patient himself to decide how long he will continue the treatment. I have used gomenol injections into the affected bronchi extensively, but am not convinced that the drug has any real disinfecting value. I have not practised bronchoscopic lavage, though some endoscopists use it with success. I have heard of two deaths from bronchopneumonia after its application, and Ballon[4] has reported two non-fatal cases of this complication.

As far as diagnosis is concerned, unless there is some definite contraindication, bronchoscopy should be employed in every case. It demonstrates foreign bodies; it helps to localize the source of the pus—in one of my cases it was the means of deciding in favour of lobectomy; and

it discloses tumours, most of them, though not all, malignant. Early bronchoscopy, as Chevalier Jackson has pointed out, may make evident a neoplasm before its presence can be detected by any other diagnostic measure, and bronchiectasis may be due to an underlying neoplasm.

EXTERNAL DRAINAGE

In contradistinction to localized pulmonary abscess, in which a properly performed pneumonotomy is attended by the happiest results, bronchiectasis does not lend itself to this form of treatment. The reason is that it is so difficult to drain more than a few of the numerous cavities. The surgeon employs external drainage in the operation of cautery pneumonectomy, but he seeks also to attain something else.

Excision

All the methods described up to now have their uses, and are capable, under suitable circumstances, of effecting great improvement in the condition of patients. But some of these methods occupy long periods of time, and they are all merely palliatives. Thoracic surgeons are more and more convinced, therefore, that the only really effective treatment of bronchiectasis is to remove the diseased area entirely. When this can be done, the patient is cured in the true sense of the word. This removal can be attained in two ways: (1) by cautery pneumonectomy, which is associated with the name of Evarts Graham ; and (2) by lobectomy, the removal of an entire lobe of the lung.

CAUTERY PNEUMONECTOMY

This is an attempt to confine the removal of lung tissue to that actually diseased. It is performed in multiple stages. At the first, portions of two or three ribs are removed, and, by means of a pad of gauze under the skin flaps, the two layers of pleura are made to adhere to one another over the requisite area. After a few days the wound is reopened, the pack is removed, and the second stage is carried out. Originally the actual cautery was now used to burn a wide area of lung, without any attempt to penetrate deeply or to deal with the whole of the diseased tissue. When the sloughs separated, many small bronchial fistulae were found to have been produced. This is where the factor of external drainage, to which I have already alluded, becomes operative. In successive stages more and more lung tissue was removed, until the affected area had been, as nearly as possible, removed. Nowadays most surgeons, I think, would use the cutting current rather than the actual cautery. The method was preferred by Graham to lobectomy, on account of its lower mortality, an advantage, however, which it is rapidly ceasing to have. Fig. 3 (see Plate) shows the radiogram of a patient who had multiple cavities in the right upper lobe. She has now been entirely cured for some eighteen months, after treatment by Graham's method.

LOBECTOMY

Of all the methods of attacking well-developed bronchiectasis this is the most rational and most attractive, for it implies a total removal of the diseased tissues. Its great drawback is its limited application, for it can obviously only be used in unilobar cases. For instance, among approximately fifty cases of pulmonary suppuration referred for a surgical opinion I found five in which lobectomy was feasible. Of course, some of the patients underwent other operations.

This is not the place to trace the development of the modern operation. Two methods are at present in vogue. The first of these, Alexander's,[5] is a two-stage method. At the first stage the entire surfaces of the lung and the parietal pleura are rubbed over with gauze for the purpose of promoting adhesions and thus preventing the development of an empyema. At the second stage the affected lobe is freed and its pedicle is encircled by tight ligatures. With provision for drainage and irrigation the chest is closed, but the wound is again opened in four or five days and then left wide open. The lobe sloughs away in ten to twenty days, and the resulting bronchial fistula eventually heals or is closed by a plastic operation. Alexander has used his operation with great success.

The second method of lobectomy is gaining more and more adherents. It is a one-stage method, and is associated with the names of Brunn and Shenstone. The chest is widely opened by an intercostal incision, pleural adhesions are separated, and the pedicle is controlled by tourniquets. Two are applied, and the pedicle is divided between them. The raw stump of the pedicle is oversewn, so that the blood vessels are closed and the open ends of the bronchi are buried. The chest is then closed, with provision for drainage. By expansion of the remaining—usually the upper—lobe, and perhaps some raising of the diaphragm, the empty space in the chest is filled.

What are the results of such an operation? Though of some severity, it is tolerated surprisingly well in the immediate post-operative stage. Lilienthal of New York, a pioneer in this field, using a somewhat different technique, had twenty-seven deaths in forty-two cases—a mortality of 64 per cent.[5] For a long time the operation was regarded as one of the most dangerous in surgery. The latest figures are much more encouraging. Tudor Edwards and Price Thomas[2] report fifty-seven lobectomies with eight deaths, and a mortality, therefore, early and late, of 14 per cent. Nissen,[5] quoting the results from the clinic of Sauerbruch, who uses a two-stage or three-stage method, reports thirty-eight lobectomies with four deaths.

I have myself attempted lobectomy in seven cases. In two of these adhesions were so formidable that isolation of the lobe was impossible. Both patients succumbed: one, a man in his twenties, developed a contralateral pneumonia three weeks after the operation ; and the other, a woman of 50 who had already undergone a partial gastrectomy for carcinoma, died of post-operative shock. It is right to mention these cases, though an actual lobectomy was not performed in either of them.

CASE NOTES IN LOBECTOMY

Of my five lobectomy patients four have recovered. The first, in whom Alexander's technique was employed, died of operative shock after the second stage. In the others the Brunn-Shenstone method was used.

Case 1.—The patient, who was referred by Dr. Hillyard Holmes, was a coal carter, aged 21. He had been troubled by his chest since childhood. For three years he had had an offensive sputum, and for one year he had not worked, and had coughed up from six to eight ounces a day. Lipiodol showed bronchiectasis of the left lower lobe. Repeated examinations for tubercle bacilli gave negative results. An artificial pneumothorax had given no relief and had been abandoned. Bronchoscopy demonstrated pus coming from the left lower lobe bronchus, especially from a dilated posterior branch bronchus ; the bronchi of the right lung were normal. There was no foreign body and no neoplasm. Three days after inducing another artificial pneumothorax I performed a left lower lobectomy. The patient made a good recovery and a bronchial fistula closed spontaneously. When I saw the patient a few weeks ago he had a little cough, but no sputum, and felt fit for work, though he had not been able to find employment.

Case 2.—This was a man who had swallowed a lighted cigarette when he was 7 years of age, and who had had a cough ever since. When I saw him the amount of sputum was about a cupful a day: it flowed out in copious quantities whenever he coughed. No tubercle bacilli were found. After lipiodol and bronchoscopic examinations I removed his left lower lobe. He reported a few weeks ago, having had some

intercostal neuralgia, which was subsiding. Otherwise he was fit, with an occasional morning expectoration of about half an ounce.

Case 3.—A girl, aged 14, was referred by Professor Tylecote. She had long-standing cough and sputum, which was not offensive. Several weeks' postural drainage failed to diminish the amount of the expectoration, which was from three to four ounces daily. Lipiodol demonstrated well-marked tubular bronchiectasis in a collapsed left lower lobe. Her recovery after lobectomy was uneventful, and she did not develop a bronchial fistula.

Case 4.—This patient was sent to me by Mr. Burt Hamilton, under whose care she had been for several months. After regular postural drainage and occasional bronchoscopic aspiration her sputum had diminished to vanishing-point, and her general condition was so good that on her transfer to one of my beds I sent her home. Within a week she returned

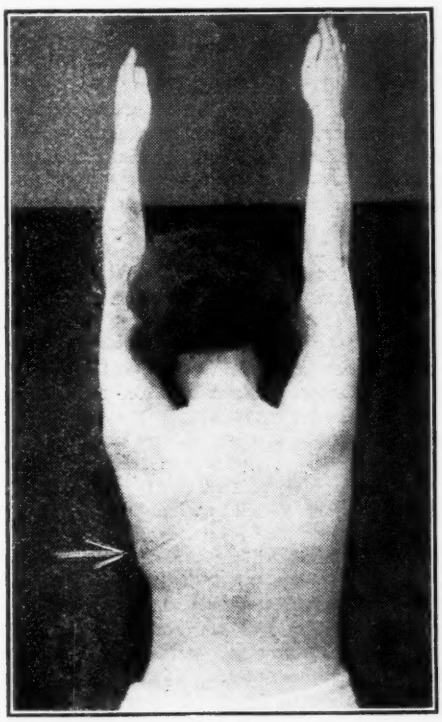

FIG. 5.

with the typical foul expectoration, and asking for operation. The case was very suitable for lobectomy (Fig. 4 on Plate), and after the operation her recovery was without incident. The photograph reproduced on this page (Fig. 5) shows the operation scar and the absence of deformity.

Such, then, are the surgical measures by which bronchiectasis may be attacked. The problem which the disease presents is a difficult and many-sided one. I hope, however, that enough has been said to show that the day of helpless inactivity is past, and that it is possible to restore to health and self-respect not a few of those who are afflicted by a condition which is crippling, frequently lethal, and all too often repulsive, not only to those with whom they come in contact, but to the unfortunate sufferers themselves.

REFERENCES

[1] Alexander, John: *Journ. Thoracic Surg.*, 1934, iii, 265.
[2] Edwards, Tudor, and Thomas, Price: *Brit. Journ. Surg.*, 1934, xxii, 310.
[3] Nelson, H. P.: *British Medical Journal*, 1934, ii, 251.
[4] Ballon, D. H.: *Journ. Thoracic Surg.*, 1933, ii, 267.
[5] Alexander, John: *Surg., Gynecol. and Obstet.*, 1933, lvi, 658.

The annual epidemiological report, giving corrected statistics of notifiable diseases in various countries, for the year 1932 has now been published by the Health Organization of the League of Nations. The authorized agents in Great Britain for the publications of the League are George Allen and Unwin, Ltd., 40, Museum Street, London, W.C.1.

ATHEROMA OF CORONARY ARTERY AND MYOCARDIAL FIBROSIS

BY

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(With Special Plate)

The close causal relation between disease of the coronary arteries and myocardial degeneration has received much attention[1] in recent years. The following case, which was very baffling, is both illustrative and worthy of note.

History of Case

A coal miner of 25, who had previously enjoyed excellent health, developed a cough in January, 1934. Gradually some dyspnoea on exertion became apparent in the following months, but he was able to walk about. On April 3rd he suffered from acute haemoptysis of bright red blood, and Dr. Landsborough, his medical attendant, had his chest examined by *x* rays the following day, and sent him with the film to the tuberculosis dispensary.

The patient at examination on April 5th was a healthy-looking vigorous adult with a slightly pale countenance. He was a little feverish, the temperature being 98.9° F. and the pulse rate 96. Apart from some crepitations in the left axilla, system examination revealed no abnormality. The skiagram of the chest showed rather a large heart shadow, with increased density of lung shadow in the mid-zone of the left lung (see Plate, Fig. 1). Sputum examination failed to reveal tubercle bacilli. The family history was good, all near relatives being alive and well.

Progress in Sanatorium

The patient was admitted to Heathfield Sanatorium for observation on April 10th. He remained apyrexial, but showed a pulse rate ranging from 84 to 96. About one ounce of mucoid sputum was expectorated daily at first, but this quantity gradually increased to three ounces within two months. On June 20th the patient's condition was much as on admission, except that the apex beat was now a little to the left of the normal limit, the trachea deflected to the left, and the chest expansion poor. A week later, when he was up for six hours daily, he complained of pain in the left side, due to friction over the left base in the mid-axillary line, and there was a slight tinge of blood in the sputum. He was put back to bed for a week, and gradually allowed up to the extent of three hours daily. His weight remained steady all this time.

On August 7th pain recurred in the left chest, and there followed about ten days of mild pyrexia (99° F.), for which complete rest in bed was resumed. The entire left lower lobe yielded impaired resonance on percussion, with feeble breath sounds and occasional crepitations. Pleural friction was noted over the right lung anteriorly on August 13th. A week later the patient became slightly cyanosed, and the respiratory rate rose suddenly to 44 for two observations, and thereafter ranged from 24 to 32 per minute. The right chest expanded poorly, and bronchial breathing was evident in the mid-zone of the right lung posteriorly. There was then manifest for the first time a soft systolic murmur at the apex, which was not propagated.

On August 28th the patient began to go downhill. He expectorated blood in the sputum, at first a tinge only, but later copious quantities of bluish-red frothy blood. The skin and conjunctivae became jaundiced, cyanosis was very evident, and the liver enlarged and painful. The heart dullness was much enlarged in all directions, the apex beat being scarcely perceptible and the cardiac sounds of very poor quality. A further *x*-ray examination was made the following day. The film of the chest (see Fig. 2 on Plate) showed a colossal increase in size of the heart shadow, and an upward bulging of the liver shadow. Two days later there was slight anasarca, and the blood pressure was 70/64. The urine revealed no abnormal constituents in solution or suspension, a feature maintained throughout: Wassermann reaction not done.

The patient began then to complain of strangulation, and on account of a tentative diagnosis of pericardial effusion an attempt was made on September 2nd to perform paracentesis of the pericardium. No fluid was obtained, but owing to the evident distress of the patient the attempt was not persisted in. Thereafter the patient became more dropsical, cyanosed, and breathless, and died fairly suddenly on September 6th.

Post-mortem Findings

At necropsy the body presented to external examination generalized oedema and pallor of the skin. The liver dullness noted in life had markedly diminished.

Thorax.—There was free fluid in the pleural cavities, and the lungs presented an extreme appearance of chronic venous congestion (brown induration). The pericardium contained about six to eight ounces of straw-coloured fluid, and the enlarged heart was in diastole.

Abdomen.—The stomach and intestines were normal. The liver was slightly enlarged, and showed the characteristic nutmeg appearance of chronic congestion. The spleen and kidneys were also in a state of chronic congestion. No infarcts were seen in the organs.

Heart.—This was in a state of dilatation, and the muscle flabby. On the anterior aspect there was a broad, whitish patch of fibroid change. The heart, on being opened, was found to be full of clot, some of which was easily washed away, leaving in the left ventricle a large amount of semi-organized tough clot adherent to a broad area of the myocardium and, more or less filling the cavity of the left ventricle. The valves were of normal appearance, although dilated. The myocardium of the left ventricle was thinned at the site of attachment of the clot. A patch of atheroma was visible on the aorta at its origin. A photograph of the interior of the left ventricle is reproduced (Fig. 3).

Pathologist's Report

The heart was sent to Dr. J. Ferguson Heggie of the Pathology Department, University of Glasgow, for examination, and he reported as follows:

"The heart is rather soft. The left ventricle is much dilated, especially in the apical portion, where the wall is thinned and stretched. There is much fibrosis in the left ventricular wall in its anterior distal part, with atrophy of the myocardium, hence the dilatation. Over the fibrosed area there is much laminated thrombus, part of which is old and organized, and part of which (superficial) is more recent. The valves are healthy; the remainder of the left ventricle and the remaining chambers are slightly dilated, but free from any gross lesion. The area of the left ventricle which is fibrosed is that supplied by the descending branch of the left coronary artery; this vessel shows marked reduction of the diameter of the lumen at a point one inch from its origin. At this point there is an atheromatous lesion occluding the greater part of the lumen, while in addition, more superficially, a patch of non-specific fibrosis of the epicardium constricts the vessel from without. The remaining coronary vessels show early atheroma, with little or no reduction of their lumen. Histological examination confirms the character of the coronary lesion and the per-arterial starvation atrophy of the myocardial cells, with resulting fibrosis of the wall of the left ventricle. There is no histological evidence of infarction of the ventricular wall in the affected region."

Summary

We report a case in a young adult of primary atheroma of the left coronary artery, with resultant fibrosis of the myocardium of the left ventricle and the formation of thrombus in the ventricle during life. The lack of infarcts is perhaps explained by the partial organization of the clot.

We are indebted to Dr. A. G. Brand for the two *x*-ray plates reproduced herewith, and to Dr. J. F. Heggie of the Pathology Department, University of Glasgow, for the pathological report.

REFERENCE

[1] Lewis, Sir Thomas: *Diseases of the Heart*, 1934, p. 41.

CARCINOMA OF THE SUPRARENAL CORTEX ASSOCIATED WITH HYPERTENSION

BY

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(*With Special Plate*)

The following case of suprarenal tumour has some interesting features which make it worth recording.

Case Report

A woman, aged 30, was admitted to the Glasgow Royal Infirmary on August 9th, 1933, with the following history. Nine weeks before admission she developed a tingling sensation in the left arm and in the left side of the face without marked loss of power. This persisted, and two weeks before admission she found when she awoke one morning that she had lost the power of her right arm and leg. She regained the power of her leg, but her arm remained weak. Her eyesight had been failing for three weeks prior to admission. No previous illnesses were noted.

On admission the patient was found to be very obese, with a florid complexion and marked hirsuties on the upper lip and side of face. There was a right-sided facial paralysis, and the right arm and leg were weakened. The reflexes were normal. The heart was enlarged and the sounds accentuated, but pure in type. The blood pressure was—systolic 210, diastolic 120; the pulse rate varied between 84 and 116. There was no abnormality in the respiratory and alimentary systems. Ophthalmoscopic examination showed neuro-retinitis, with many haemorrhages and much exudate in both fundi. The Wassermann reaction was negative. Blood urea was 27 mg. per cent. There was a trace of albumin in the urine all the time the patient was in hospital, and also a quantity of sugar, which varied between 2.1 and 8.75 per cent.

The case was diagnosed as one of cerebral tumour, and was transferred to the surgical house, where, on September 1st, 1933, under local anaesthesia, a decompression operation was performed in the left parietal region. The patient became comatose soon afterwards, the temperature rose steadily to 107° F., the pulse to 160 per minute, and death took place the following day. A post-mortem examination was carried out thirty-six hours after death. The body was noted to be that of a very obese, youngish woman. Growth of hair was marked on the upper lip and on the side of the face.

POST-MORTEM FINDINGS

The pericardium was normal. The heart weighed 600 grams, and showed dilatation of the right ventricle, with well-marked hypertrophy and slight dilatation of the left ventricle. The tricuspid and mitral valves were normal, but their rings were slightly dilated, taking four and three fingers respectively. There was atheroma of the aorta, with multiple yellowish and white patches of thickening, and some calcareous deposit in places.

The pleurae were normal; the right lung weighed 700 grams, the left 520 grams, and both showed a very early bronchopneumonia. There was no abnormality in the trachea or oesophagus. The peritoneum and the stomach and intestines were normal, although there was a considerable deposition of fat around all the abdominal organs and in the mesentery. Marked post-mortem changes without other abnormality were seen in the liver, which weighed 1,600 grams. The gall-bladder, the spleen (which weighed 165 grams), and the pancreas were normal, as also were the kidneys (right 195 grams, left 185 grams), apart from post-mortem decomposition.

The larger part of the right suprarenal was replaced by a cystic swelling, which was roughly circular, and measured 3 cm. in diameter and 1.5 cm. in thickness. The left suprarenal appeared, if anything, slightly smaller than normal. A piece of bone had been trephined from the left parietal region of the head and replaced. The brain weighed 1,240 grams. There was a recent softening lying in the region of the basal nuclei of the left side, 7 mm. in diameter, and involving the

grey matter of the outer edge of the optic thalamus about the middle and the internal capsule in the neighbourhood. Many other softenings, older than the last and varying in size up to that of a pea, were found scattered throughout the white matter of the rest of the brain. The vessels of the circle of Willis showed a moderate degree of atheroma.

MICROSCOPICAL EXAMINATION OF TUMOUR

The suprarenal tumour was fixed whole in formalin. When cut it was found to have a fairly well defined fibrous capsule and its interior to be very dark in colour, with yellow areas and some haemorrhage. Microscopical examination showed much necrosis of the tumour tissue. This was probably largely post mortem, owing to the time between death and the necropsy. Many saprophytic organisms were seen in sections. In the better-preserved parts the cells had an alveolar arrangement, with a varying quantity of stroma between, resembling roughly the zona glomerulosa of the normal suprarenal. There were capillary blood vessels in the stroma, but they were not numerous. The cells comprising the tumour varied in size and nuclear structure ; some contained large globules of fat, others had eosinophil protoplasm, which had a foamy appearance. The nuclei also varied very much in size, and most were colloid in character and speckled with fine chromatin granules. The characteristic feature of the tumour was the presence of giant cells with foamy protoplasm, and containing two or more very large nuclei, which in turn often contained one or two roughly rounded dark blobs, like nucleoli. An occasional nucleus was almost completely filled by a clear globule. One or two areas of massive haemorrhage were seen.

The diagnosis made was carcinoma of the suprarenal. The kidneys, pituitary, and thyroid showed no abnormality.

Discussion

There are three interesting features of this case. First, the marked growth of hair on the upper lip and face suggested the presence of virilism, which was, unfortunately, not confirmed by a complete history. Adrenal virilism and pubertas praecox are, however, well-known accompaniments of suprarenal cortical tumour, and need not be considered further here. Secondly, there is the hypertension ; this is the important feature of the case. A systolic pressure of 200 mm. in a patient of 30 years with no evidence of renal disease is by no means common, and when a tumour of the adrenal is found as an accompaniment one is led to believe that there is more than coincidence at work.

Perusal of the literature shows that, although carcinoma of the suprarenal cortex associated with hypertension is little known in this country, the syndrome is familiar abroad. Murray and Simpson reported the case of a woman, aged 36, who had hair on the face and all the signs of virilism. Her blood pressure was 200 mm. of mercury. A large tumour was removed from the suprarenal and the signs of virilism disappeared, while the blood pressure fell nearly to normal. Margarete Winkel described the case of a female, aged 36, who for eleven years previously had gradually developed male characters and was found to have a high blood pressure, glycosuria, and a relative polymorph neutrophil leucocytosis. She died two days after removal of a suprarenal tumour.

A man of 42, with diabetes, high blood pressure, hypertrophy of the heart, and atherosclerosis, was found to have an atrophic pancreas and a suprarenal tumour on each side. Schröder, who recorded the case, ascribed the condition to excessive secretion of adrenaline by the tumour. Langeron and Lohéac in their studies came to the conclusion that primary suprarenal tumours may set up arterial hypertension, which might be associated with a cortical carcinoma when it was continuous in type, or with a paraganglioma of the medulla when it was paroxysmal. They concluded that suprarenal tumours of any kind, when accompanied by hypertension, contain more adrenaline than the normal gland, and that this evidently constitutes the mechanism by which the tumours lead to arterial hypertension.

It was formerly believed that Addison's disease, with its marked arterial hypotension, was due to a deficient secretion of adrenaline into the blood stream because of destruction of the adrenal medulla. Recent work by Swingle and Pfiffner and others suggests that the deficiency of Addison's disease is one of the cortex, and not the medulla. Rowantree and his co-workers in America and Levy Simpson in this country have treated the disease by cortical extracts with some success. If Addison's disease, therefore, be due to deficient production of some cortical secretion we may be entitled to suggest that the excessive production of this same substance is the cause of the hyperpiesia in cortical carcinoma rather than excessive secretion of adrenaline. The presence of glycosuria in the case here recorded and in others in the literature is worth noting, and might be readily understood if one remembers the close association between the endocrine glands and how disturbance of the secretion of one may lead to dysfunction of another. The third interesting feature is the similarity of the signs and symptoms to those of cerebral tumour. This is not confined, however, to cases of hyperpiesia due to suprarenal tumour, but to all high blood pressure cases where minute softenings from spasm or thrombosis of arterioles in the brain cause transient or permanent paretic disturbances.

Summary

1. A case of hypertension associated with a carcinoma of the cortex of the suprarenal is described.

2. Other similar cases in the literature are noted.

My thanks are due to Dr. Middleton, who kindly supplied me with the clinical history of the case, and to Professor J. Shaw Dunn, for his keen interest and help at all times.

BIBLIOGRAPHY

Murray and Simpson: *Lancet*, 1927, ccxiii, 745.
Winkel, Margarete: *Deut. Arch. f. klin. Med.*, 1928, clix, 112.
Schroder, K.: *Virchows Arch. f. Path. Anat. u. Physiol.*, 1928, cclxviii, 290.
Langeron, L., and Lohéac, P.: *Presse Méd.*, 1928, xxxvi, 1153.
Journ. Amer. Med. Assoc., 1931, xcvi, 231 ; xcvii, 1446.
Proc. Roy. Soc. Med., 1931, xxiv, 497.
Quart. Journ. Med., 1932, N.S., i, 99.

During the eleventh year of the Ella Sachs Plotz Foundation for the Advancement of Scientific Investigation twenty-seven grants were made, fourteen being to workers outside the United States. The Foundation has now been responsible for a total of 227 grants for researches in four of the five continents. Two of the recent grantees are working in England. Dr. P. Ellinger has been continuing in London his work on the physiology, pathology, and pharmacology of the kidney, and on the application of *intra-vitam* staining to the cytology of the beginnings of cancer. Dr. H. D. Kay is investigating the relationship of phosphorus deficiency to rickets. It is announced in the annual report of the Foundation that during the present great need of funds grants will be given to those working in sciences closely related to medicine without reference to any special fields, but the maximum size of grants will usually be less than 500 dollars. Applications for grants to be held during the year 1935–6 must reach Dr. J. C. Aub, Huntington Memorial Hospital, 695, Huntington Avenue, Boston, Massachusetts, before May 1st next. There are no formal application sheets, but those applying must state definitely the qualifications of the investigator, the character of the proposed research, the amount of grant requested, and the specific use to which it would be devoted. It is also desirable to include letters of recommendation from the directors of laboratories or clinics in which the work will be done.

BASOPHIL ADENOMA OF THE PITUITARY GLAND WITH RENAL CHANGES

BY

H. G. CLOSE, M.D.LOND.

(From the Departments of Pathology and Bacteriology, Guy's Hospital)

(With Special Plate)

In 1932 Cushing[1] suggested that the multi- (or pluri-) glandular syndrome—obesity, hirsutism, osteoporosis, hyperpiesia, polycythaemia, etc.—was probably due to the excessive secretion of the basophil cells of the pituitary gland, since an adenoma of these cells was a frequent finding in this type of case. His claim has been supported to some extent by reports of cases in which the syndrome has been recognized and the predicted basophil adenoma found in the pituitary.

On the other hand, the association of the syndrome with a basophil adenoma of the pituitary is by no means a constant one. As Leyton[2] has pointed out, the multiglandular syndrome has appeared in carcinoma of the thymus and of the bronchus, and in these cases no basophil adenoma was found (although that does not necessarily mean that there was no hypersecretion of the basophil cells). Another objection to Cushing's claim was the knowledge that certain symptoms in the syndrome had been produced by disordered function of other endocrine glands—for example, hirsutism and osteoporosis as a result of the presence of tumours of the suprarenal cortex and parathyroid gland respectively.

Recently Russell, Evans, and Crooke[3] reported two cases of basophil adenoma of the pituitary gland, and a review of the published cases led them to conclude that, of the many symptoms of the multiglandular syndrome, persistent high blood pressure and obesity were most commonly associated with this type of pituitary lesion. Cushing[1] himself noted in his original series of cases that a high blood pressure was one of the more constant findings. It would not, however, be correct to make the converse statement—that in cases of high blood pressure a basophil adenoma is frequently found—although it has been claimed that the pituitaries of high blood pressure cases show an increased number of basophil cells (Berblinger, Kraus—quoted by Russell, Evans, and Crooke[3]). The question of the relation of high blood pressure to basophil cell secretion may have to await final settlement by biochemical methods. Meanwhile, a study of the structural changes in the kidney seems to throw some light on the nature of the basophil cell secretion, and may explain the fact that whereas high blood pressure is a fairly common symptom basophil adenomata are comparatively rare.

MacMahon and others[4] drew attention to the presence of malignant nephrosclerosis (Fahr) in the kidneys of two cases of basophil adenoma, and in one of the two cases described by Russell, Evans, and Crooke malignant nephrosclerosis was also present; in the kidneys of their other case changes characteristic of benign hypertension only were found. The suggestion has been made, therefore, that the high blood pressure found in cases of basophil adenoma tends to be of the rarer "malignant" type rather than of the more frequent benign type.[6]

The case to be described below is another example of the association in a young person of a high blood pressure, a basophil adenoma of the pituitary, and what is believed to be malignant nephrosclerosis.

History of Case

A single man, aged 27, was admitted to Guy's Hospital under the care of Dr. Poulton on July 16th, 1932, with symptoms of weakness, blurred vision, and epigastric pain. His parents and brothers are healthy, and none of them has had kidney disease. He himself had had no previous severe illnesses, and was able to work as a builder to within six months of his death. He had acute tonsillitis when he was 19, and many sore throats subsequently. At the age of 23 he contracted gonorrhoea. During the last six years of his life he had often to get up at night to micturate, and on several occasions in the last four years he passed blood in his urine. In his last two years he complained of severe frontal headaches, occasional blurring of vision, vomiting, cramps and constipation. All these symptoms became worse seven months before death. He also became breathless on exertion, and during the fortnight preceding admission he had several attacks of breathlessness at night. He had always been of a nervous, energetic disposition, and his active habits misled the relatives into making light of his symptoms. The portrait here reproduced is from a snapshot taken two months before his death, and shows that he was not obese.

Condition on Admission

On admission the patient was pale and drowsy. Petechiae appeared first on the palate and later in the skin of the chest and forearms. Albuminuric retinitis and haemorrhages into the retinae were seen, and his limbs showed tremors and, occasionally, cramp-like spasms. Haemoglobin was 35 per cent.; blood pressure, 190/150; and blood urea content, 300 mg. per 100 c.cm. The urine contained pus cells and albumin (three parts per 1,000), and had a specific gravity of 1008. He weighed 138 lb. (63 kg.), and his height was 5 ft. 9 in. (175 cm.). The symptoms became rapidly worse, and visual hallucinations, epigastric cramps, and delirium appeared. Finally, he became comatose, and died on July 25th, nine days after admission.

Post-mortem Findings

The post-mortem examination was performed by Dr. C. K. Simpson eight hours after death. The body was that of a muscular young man, and, apart from the pallor and petechiae already noted, showed no abnormal features such as hirsutism, obesity, or wasting. The brain was normal. The trachea and bronchi were clear, and the lungs showed no gross oedema or congestion. There were a few subepicardial petechiae and two ounces of clear fluid in the pericardial sac. The heart showed well-marked concentric hypertrophy of the left ventricle, but no other abnormality. The coronary vessels were healthy and the aorta was mildly atheromatous. There is no record of the weight of the heart. The tonsils were greatly swollen and inflamed, and the crypts contained pus. Numerous petechial haemorrhages were seen in the cardia of the stomach and in the lower end of the ileum, and the entire colon showed many irregular haemorrhagic and ulcerated areas. No abnormality was noted in the thyroid, thymus, adrenals, pancreas, or testes.

KIDNEYS

Both kidneys were shrunken, pale, and mottled. The capsules stripped easily, and the underlying surface was rather coarsely granular. The cortex and medulla were imperfectly differentiated by diffuse scarring, the more severe changes being present in the cortex. There was no macroscopical evidence of ischaemic atrophy or undue prominence of the vessels. For further examination sections of the kidney were referred to Dr. Dorothy S. Russell, who has kindly allowed me to quote from her report as follows:

"The histological changes are characteristic of an advanced stage of chronic insidious Bright's disease or nephritis repens.

The total amount of destruction is very great, the inflammation relatively diffuse, and the inflammatory reaction, as shown by the glomerular changes and the leucocytic infiltration, severe. The amount of ischaemic nephritis is slight, and the degree of vascular hypertrophy only moderate. Many of the vessels show changes of the kind that has been associated by many authorities with malignant nephrosclerosis, though the acute arteriolar lesions that have been described in this condition are remarkably inconspicuous. The histological changes in the kidney as a whole are those of nephritis repens, Type 2."

Professor H. E. MacMahon also examined the kidney sections, and in the summary of his report states that:

"From the standpoint of the kidney the differential diagnosis lies between chronic glomerulonephritis and malignant nephrosclerosis. The widespread destruction of tubules and glomeruli and the diffuse sclerosis would suggest chronic glomerular nephritis. The character of the glomerular lesions and the extent of the vascular lesions within the kidney favour the diagnosis of malignant nephrosclerosis."

PITUITARY GLAND

The pituitary was normal in size and appearance, and was examined in serial sections. The posterior lobe contained many small hyaline bodies, and was not invaded by cells from the pars intermedia. The cleft was greatly distended by colloid material. The anterior lobe appeared to be normal, except for one lateral border, where there was a small adenoma measuring 1.9 mm. by 1.5 mm. and 1.8 mm. in the vertical plane. This small tumour was not encapsuled, but the acini surrounding the margin showed some compression.

The adenoma consisted almost entirely of basophil cells with normal-sized nuclei, but with rather less cytoplasm than is found in the normal basophil cells. They were irregularly arranged, and there was very little stroma to support them. A small recent haemorrhage had occurred in the adenoma. The reproduction in the Special Plate shows the tumour at the lateral border of the anterior lobe of the pituitary.

Remarks

This case is the third to be described in which a basophil adenoma of the pituitary in a male has been identified post mortem. Cushing[1] noted that this type of pituitary tumour seemed to occur with greater frequency in females because the symptoms were perhaps not so easily recognized in a male. Apart from the high blood pressure in a young person, there was no reason to suspect either the syndrome or the pituitary lesion, and the finding of the basophil adenoma was accidental. This case, too, is unlike the others of basophil adenoma so far recorded, in that the kidney was markedly affected by chronic glomerulonephritis. But there is no evidence to suggest that the association of the chronic glomerulonephritis with the basophil adenoma or with the malignant hypertension was other than fortuitous.

Liability to sepsis—another feature noted by Cushing[1]—was exemplified in the case here. The patient had had many sore throats in the last eight years of his life, and at the post-mortem examination the foul condition of the tonsils was a striking feature.

Finally, the absence of cells in the posterior lobe of the pituitary need not be considered abnormal, in spite of Cushing's[5] recent attempts to attribute the raised blood pressure to the secretion of these cells. If a large series of pituitaries be examined it will be found that the invasion of the posterior lobe by cells growing out from the pars intermedia is comparatively common, particularly in middle-aged subjects, and that marked invasion of the posterior lobe may also be seen in the pituitaries of persons whose blood pressures have been normal for at least several months before death.

Summary

A case of basophil adenoma of the pituitary is described in which the *only* symptom of the many forming Cushing's syndrome was a high blood pressure. The finding of malignant nephrosclerotic changes in the vessels of the kidneys is additional evidence in favour of the suggestion that the hypertension in cases of this pituitary lesion tends to be of the "malignant" type.

My thanks are due to Dr. E. P. Poulton and Dr. C. K. Simpson for permission to use the clinical and post-mortem notes respectively, and to Dr. Dorothy Russell, Professor H. E. MacMahon, Dr. A. A. Osman, and the Clinical Research Committee of Guy's Hospital for their help.

REFERENCES

[1] Cushing, H.: *Bull. Johns Hopkins Hospital*, 1932, l, 137.
[2] Leyton, O.: *Lancet*, 1934, i, 1221.
[3] Russell, D. S., Evans, H., and Crooke, A. C.: Ibid., 1930, ii, 240.
[4] MacMahon, H. E., Close, H. G., and Hass, G.: *Amer. Journ. Path.*, 1934, x, 177.
[5] Cushing, H.: Ibid., 1933, ix, 539; 1934, x, 145.
[6] MacMahon, H. E.: Ibid., 1934, x, 707.

A CASE OF CHRONIC DISSEMINATED PULMONARY TUBERCULOSIS WITH ERYTHEMA NODOSUM

BY

SIDNEY DEANER

TUBERCULOSIS OFFICER, NORTH WORCESTERSHIRE

(With Special Plate)

The following case is of a type recently reviewed by the *British Medical Journal*,[1] and for which was urged the term "chronic disseminated haematogenous tuberculosis with pulmonary localization." The condition is of great interest in view of the controversial interpretation of such a lesion, and in this case we have, in addition, erythema nodosum. We also have for comparison the original source of infection, a typical case of "tertiary" pulmonary tuberculosis.

Case History

The patient, E. A., a female aged 29, was first seen on May 25th, 1934. She had been ill for two weeks, and on the extensor surfaces of both legs were the characteristic lesions of erythema nodosum. Until the previous week she had been sleeping with her sister, R. A., aged 26, who had been going downhill for about six months, and who was now recognized as suffering from tuberculous infiltration of the right upper lobe, the sputum being positive. E. A. had no cough or sputum, and on examination there were no definite physical signs in the chest, apart from impaired percussion note over the left root. She was then *x*-rayed, and the film, to our surprise, revealed what appeared to be an acute disseminated pulmonary tuberculosis: the appearances also resembled pneumoconiosis, but this was excluded in view of the patient's work. When she was admitted to the sanatorium on June 23rd the erythema nodosum had cleared up. She was afebrile and, except for an occasional rise to 99°, remained so until her discharge in September. There was definitely no cough or sputum. Unfortunately, through the tactlessness of a nurse, the patient was made averse to any investigations, so that we were unable to do a gastric lavage. Throughout her stay her general condition was very unsatisfactory, and she had lost five pounds during that period. Since her discharge her condition has improved somewhat, and as there are no constitutional symptoms she has decided to return to work.

Discussion

The films of the two sisters are presented for comparison (see Plate). It will be seen that they are each characteristic of the secondary and tertiary stages of Ranke. We have here between two adults the type of contact infection we are accustomed to see between adult and child. The

type of disease, therefore, does not depend upon the age of the patient but upon the age of the infection. There is no definite evidence upon which to base the time of the onset of the primary infection, except that it is presumably recent, since the history of the original case does not go back further than six months before I saw the contact case. The actual onset of the secondary stage is also difficult to determine, unless we assume that it was coincident with the appearance of the erythema nodosum.

The radiological appearances are, however, characteristic of a haematogenous spread. It is interesting to note that Blacklock[2] found the "snow-storm" appearance seen on radiological examination to be associated with subacute miliary lesions, either alone or with subacute tuberculous bronchopneumonic lesions. It is surprising, therefore, that the constitutional symptoms one would have anticipated as an allergic response were absent: the only allergic manifestation in this case was erythema nodosum.

It is seven months since the patient was first seen, and a film of the chest taken this month reveals the same radiological appearances. The patient is at work and appears fairly well. Radiologically speaking, one would have proclaimed the prognosis as bad: instead, despite constant exposure to infection, the patient is maintaining her general condition. We are obviously dealing with a prolonged secondary stage of Ranke, a chronic, generalized pulmonary tuberculosis, the fate of which, in view of the unaltered radiological appearance, is hanging in the balance. For whether the condition will break down, on the one hand, or progress to fibrosis and calcification on the other hand, depends upon the mechanism of humoral defence, which we are wont to describe as "resistance."

In discussing a case such as this, one may attempt to seek some other explanation than the conception of a prolonged secondary stage to account for the radiological appearances presented. Such other explanation might be the inhalation of larger doses of bacilli, with or without subsequent "in-coughing," resulting in the formation of multiple foci in the lung field. This conception of a "generalized primary complex" is perhaps not incompatible with Ranke's views. The presence of erythema nodosum invalidates the argument in this case, but it is suggested that the "generalized primary complex" should be considered in dealing with cases in which the *x*-ray indicates a generalized tuberculosis, but where there are hardly any constitutional symptoms.

One last point. It is not suggested in the least that all cases of erythema nodosum are tuberculous in origin. On the other hand, this case illustrates the point that where these skin lesions appear in a patient who is a definite contact case then a film of the chest should be taken always.

I should like to acknowledge my indebtedness to Dr. Houfton for his help in dealing with the case.

REFERENCES

[1] *British Medical Journal*, November 3rd, 1934, p. 815.
[2] Blacklock: *Tuberculous Disease in Children*.

J. G. M. Bullowa, L. W. Smith, and T. B. Quigley (*Amer. Journ. Dis. Child.*, January, 1935, p. 91), in view of the beneficial effect of pentose nucleotide in agranulocytic angina and other toxic leucopenias, made a trial of the drug in measles and whooping-cough, both of which usually show quantitative or qualitative abnormalities in the leucocyte count. In measles 5 c.cm. were given intramuscularly during the early stage of the disease on five consecutive days and in whooping-cough 5 c.cm. were given in the course of ten days. More or less severe reactions occurred in several cases, and the drug did not appear to have any favourable action on the course of the disease.

Clinical Memoranda

Acute Iodine Burn

(With Special Plate)

The following is a short account of a curious and outstanding case of iodism, beautifully illustrated (if I may say so) in the photograph reproduced on the Special Plate.

The patient, a delicate, undernourished, and anaemic girl of 13, knocked the back of her hand against the wall of the school playground, bruising it, but without breaking the skin. Her teacher, who (like all nice lady teachers) knew all about surgery and injured hands, painted the painful part with very weak (education authority ambulance box) tincture of iodine. The next morning the whole of the back of the child's hand was red and greatly swollen, and the grossly erythematous part had a distinctly raised margin. It was then decided by the girl's parents to consult the doctor. As it was Wednesday—the doctor's half-holiday—they duly waited till the surgery was closed and all the visits paid, and came along to the doctor's house about 4 o'clock in the afternoon. The doctor, who knew still more about surgery and injured hands, was, on this unfortunate occasion, confined to bed with an acute coryza. Not wishing, however, to disregard the parent's story about the severe accident and the urgent symptoms, he condescended to see the girl in his bedroom. The child and her parent were accordingly shown up, and, sticking his bleary eyes out of the bedclothes, he diagnosed "erysipelas or something like that," and told the fond parent to go home and paint a band of iodine round the child's arm well above the inflamed part and "come round to the surgery in the morning."

With the morning cool reflection and the child both blessed the doctor with their presence. The brüised hand was "roary" red, raised, and bespattered with large and small watery blebs. Higher up on the arm was a large band—about 5 inches broad—in the same condition as the back of the hand had been on the previous afternoon. Between these two there was a narrow strip of normal skin which alone had been untouched by the iodine, and the whole arm was very markedly oedematous. On the following day the photograph was taken, which shows most of these features distinctly. The girl's arm healed up in about ten days with a little acriflavine, and the parents' minds did the same with a little "psychology."

Wunderlock once remarked that "the history of medicine is the history of human error." Wunderlock was a great man.

Port-Glasgow. A. MCNAIR AITKEN, M.B.

Scurvy during Treatment for Gastric Ulcer

Deficiency diseases are infrequent in England, except in infancy. This is particularly true as regards scurvy, a case in an adult being a rarity. Occasionally, however, the disease actually comes on whilst the patient is under medical care, the treatment, in fact, being the cause of the deficiency. In the treatment of gastric ulcer the usual course is that the medical adviser focuses his attention on the main disease from which the patient is suffering, and constructs a suitable dietary for that particular malady. The diets most common in use are markedly deficient in vitamin C. This, however, is of small importance if the treatment is one of short duration, as prolonged deprivation of vitamin C is necessary before the onset of the disease. Davidson[1] reports two cases, one of which had been on a Sippy regimen, and later a Lenhartz diet, the other having been treated by a Sippy diet for three years. In both cases scurvy resulted.

[1] Davidson, P. B.: *Journ. Amer. Med. Assoc.*, March, 1928, xc, 1914.

In the case to be reported the patient had been under medical treatment for gastric ulcer for sixteen years, and the cause of the disease appears to have been due to an alleged statement of one of her medical attendants, that on no account should she eat fruit, because, being acid, it would "upset her stomach."

CASE RECORD

L. C., married, aged 58 years. Sixteen years ago she had had a brisk haematemesis and melaena due to a gastric ulcer. The presence of the ulcer was afterwards confirmed radiographically. From that time she suffered from pain of varying intensity immediately after meals. Occasionally she had been quite free from pain, but sometimes it had been so bad as to necessitate morphine. Throughout this period she had been carefully dieted and treated with alkalis. She stated that twelve years ago her doctor warned her against eating fruit, and that throughout these years she had had very little vegetable except mashed potatoes. Her diet, which she had closely followed, consisted of boiled fish, mashed potatoes, eggs, milk, custard, and bread-and-butter. She was quite certain that, at least for the past two years, she had not tasted grapes, oranges, or lemons. The gastric symptoms troubled her on and off up till December, 1933, when the epigastric pain was so severe that she was kept in bed for fourteen weeks on a milk diet. She was allowed up again in April, 1934, for a short while, but as the pain returned she was kept in bed from May up till the time of admission to hospital. As it was thought that the dental condition might be the cause of the persistence of the ulcer some teeth were extracted six days before admission to hospital, the gums continuing to ooze for five days.

On admission to St. Mary, Islington, Hospital on July 21st, 1934, she complained of soreness of the mouth, severe pain in both feet, and epigastric discomfort. She was pale, but not wasted. The breath was heavy and offensive, the tongue moist and clean, but the gums were haemorrhagic and swollen, and appeared to be fungating over the palate. There were purpuric patches on the hands, and small splinter-like haemorrhages under the finger-nails and toe-nails. The feet were slightly oedematous, and on the dorsum of each was a discoloured area which had the appearance of commencing gangrene. The pulsation of the dorsalis pedis arteries could not be felt. The heart and lungs were normal, and there were no physical signs in the abdomen.

Blood examination was made with the following results: red blood cells, 4,270,000 per c.mm.; haemoglobin, 70 per cent.; colour index, 0.8; white blood cells, 3,000 per c.mm.; polymorphs, neut., 66 per cent.; lymphocytes (small), 32 per cent.; large mononuclears, 2 per cent.; reticulocytes, less than 2 per cent.; bleeding time, normal; coagulation time, normal; blood platelets, normal; blood urea, 56 mg. per 100 c.cm. The red corpuscles were normal in appearance, except for slight anisocytosis.

A swab taken from the gums showed fusiform bacilli, spirochaetes, and streptococci, and Gram-positive bacilli were seen in Gram films. Culture gave a growth of non-haemolytic streptococci.

DIAGNOSIS AND TREATMENT

From the history and the blood count the diagnosis of scurvy was made, and the patient put on an anti-scorbutic diet, consisting of oranges, grapes, and tomato-juice. Within a few days there was noticeable improvement in her condition, and the gums began steadily to shrink. Two weeks after commencement of the treatment the discoloured areas on the dorsum of the feet had almost cleared up, and pulsation could be felt in both dorsalis pedis arteries. At this stage both feet and hands were *x*-rayed, and there were large irregular vacuolations, suggesting acute bony atrophy at lower end of diaphysis, and also involving bones of tarsus and carpus. There was also a small subperiosteal haemorrhage of the right fibula. The *x*-ray appearances thus suggested adult scurvy. The gastric lesion was treated in the usual way, and before she left hospital the *x*-ray of the stomach was normal and sequential occult blood tests were negative.

I am indebted to Dr. Francis Rayner for his report on the *x*-ray examination of the bones and stomach.

London, N.19. B. BARLING, M.D., M.R.C.P.

Reviews

CHRONIC RHEUMATISM

For the making of many books "rheumatism" has a not inconsiderable responsibility. Hence an addition to the list may perhaps be viewed with some suspicion. Such an attitude of mind, however, soon disappears on the reading of *Chronic Rheumatism, Causation and Treatment*,[1] by Dr. FORTESCUE FOX and Dr. VAN BREEMEN. First, on a subject which has suffered much from dogmatism, the authors supply careful observation and reasoned conclusions. Equally impressive is the attempt to place upon a common basis all the phenomena which are more or less generally named rheumatic, and to establish the interrelation of these. While particular terms may well be necessary for purposes of description and discussion, it is a great gain to get away from squabbles about names, and to find that many apparently different appearances can be recognized as having one and the same origin.

One of the main propositions advanced in this book is that in every case of chronic rheumatic disease there are concerned infection, constitutional anomalies, disturbances in the circulation of the skin, and environmental influences, these factors varying in their relative proportions in different cases. Here is the common aetiological basis of the various forms of chronic rheumatic disease. Particular stress is laid on the details of the cutaneous circulation, and the chapter dealing with this is a detailed physiological argument which relates pathological variation to forms of physical treatment and especially to the actions and values of different kinds of baths. Throughout, the book is distinguished by a wide experience carefully collected, by reasoned argument, by practical applications, and by lucid and highly readable exposition, while the references to the literature of the subject are exceptionally complete.

Whether their work is considered as a clinical textbook or as a literary exercise, the authors merit cordial congratulations: they have made a notable contribution to a subject which includes many individual sufferers, and the economic importance of which recent inquiries have strongly emphasized.

HEAD INJURIES

At a time when those whose business it is are seeking by every means to reduce the high incidence of road accidents there appears appropriately a monograph on *Head Injuries*[2] by Mr. L. BATHE RAWLING. The author, besides his long and honourable teaching hospital experience, has the additional recommendation for his production in having had care of a large concentration of head cases during the Great War. His slender volume gives a straightforward description of the associated phenomena, of the pathology as far as it is understood, and of the treatment, both medical and operative. The account is perhaps rather too straightforward, giving an air of simplicity to what is often so complex and difficult. If this be a fault, it is apparent that it arises not from a lack of appreciation of the difficulties, but from the author's effort at clear exposition, an aim achieved by an easy literary style.

Although laying emphasis on the greater importance of the danger to the brain, Mr. Rawling gives a very

[1] *Chronic Rheumatism. Causation and Treatment.* By R. Fortescue Fox, M.D., F.R.C.P., and J. Van Breemen, M.D. London: J. and A. Churchill, Ltd. 1934. (Pp. 364; 38 figures, 8 plates. 12s. 6d.)

[2] *Head Injuries.* By L. Bathe Rawling, M.B., B.Ch., F.R.C.S. London: H. Milford, Oxford University Press. 1934. (Pp. 86; 22 figures. 7s. 6d. net.)

complete and illustrated description of the various basal fractures. The sections dealing with the more urgent indications for operation, compound fractures, and subdural and extradural haemorrhages have been given the space to which their importance entitles them. But it is a rather serious omission to forget the necessity for advising bilateral exploration, or preparation therefor, in subdural haematoma. It would have been interesting also to have the author's experiences in the treatment of such sequelae as arterio-venous aneurysm, frontal aerocele, and persistent cerebro-spinal rhinorrhoea. Perhaps he will expand the work in these directions in further editions.

The production of the book and its illustrations are in all ways up to the usual high standard of the Oxford University Press.

PREVENTIVE MEDICINE IN CHINA

Dr. WU LIEN-TEH, director of the Chinese National Quarantine Service, has edited a collection of the best original articles that have appeared in the seven volumes of *Reports on the Manchurian Plague Prevention Service*,[3] and these have been published as a memorial volume dedicated to the delegates attending the ninth Congress of the Far Eastern Association of Tropical Medicine, recently held at Nanking. Most of these articles have already been reviewed in the *Journal*. They cover two decades of useful work in the first systematic organization of public health in China—the era of constructive effort. The first half of the volume is taken up with accounts of pneumonic plague and the studies connected with the morbid histology and transmission of that fell disease. Cholera, scarlet fever in China, venereal disease, blood grouping in Mongolia and Manchukuo, and an abstract of nosological articles are the leading subjects of the latter half of the book. There is no doubt that scientific progress is now being made by the Chinese in China, but as yet it is rather localized, being confined to the leading Treaty Ports, while the greater part of the hinterland remains *in statu quo*. There are large provinces, such as Yunnan and Szechuan, where cholera and plague epidemics arise and cause high mortality unchecked by the old-fashioned methods, which are powerless to cope with such severe outbreaks. The volume under review forms an authoritative summary of the work which has been accomplished, and will be found a most useful compendium by all those interested in tropical medicine.

AN ORGANIZER OF AMERICAN SURGERY

In *Fifty Years of Medicine and Surgery: An Autobiographical Sketch*[4] Dr. FRANKLIN MARTIN presents the lay public, the subscribers to *Surgery, Gynecology and Obstetrics*, which he founded in 1905, and the medical profession with a useful footnote to the history of American surgery. This imposing record of the organization and administration of the great journal just mentioned, of the Clinical Congress of Surgeons, the American College of Surgeons, the Gorgas Memorial Institute, and the participation of the medical profession of the United States in the world war, in all of which the author took an essential part, is based on his personal diary and professional writings. It is prefaced by two forewords, which pay tribute to the author's organizing achievements; in the first of these Dr. William Mayo speaks of *Surgery, Gynecology and Obstetrics* as "the greatest surgical journal in the world," and the founder, and still its editor, as "one of the greatest of America's benefactors." In the second foreword Professor George Crile of Cleveland says that "all through his life, and despite every disguise, Franklin Martin has been shy, fearless, imaginative, idealistic, and a dreamer."

Born in Wisconsin—like Nicholas Senn, J. B. Murphy, Ochsner, and Frank Billings, also famous in the medical history of Chicago—Franklin Martin grew up on a farm, and worked hard on the land until the sudden inspiration, in 1876, to become a medical man was at once followed up by serving as an apprentice to a surgeon, and in six months' time he had learnt by heart practically every line in Gray's *Anatomy*. In October, 1877, he entered Chicago Medical College, and, though hard pressed financially, graduated in March, 1880. Steadily he struggled up the ladder of professional success. Constant cheerful hard work had its due reward, and with public-spirited energy he originated the Clinical Congress of Surgeons of North America in 1910. This gave birth to the American College of Surgeons, which the late Sir Rickman Godlee (described as its "godfather") addressed with greetings from the English College, of which he was then president, on November 13th, 1913. An account of the great Mace presented to the American College of Surgeons by the consulting surgeons of the British Armies, "in memory of mutual work and good-fellowship in the World War, 1914–18," is appropriately included.

ANATOMY FOR STUDENTS

Illustrations of Regional Anatomy,[5] by Dr. E. B. JAMIESON, are, as he describes them, "paraphrases" of his blackboard diagrams; in other words, they are artistic renderings or amplifications of the author's original drawings, which he has, with the skilful help of Mr. Charles E. Pierce, reproduced for the benefit of a larger public than that of his immediate clientele. The plates, many of which are coloured, are bound together in such a way that they can easily be detached from the cover and pasted into a student's notebook, or exhibited to a large class by means of an epidiascope. They are remarkably clear and accurate, and the names of the parts are printed distinctly, with leaders passing directly to the parts which are indicated. Unnecessary details which would obscure the general view have been omitted, and the drawings are therefore easy to follow without any explanatory legends. The student is thus enabled to work out for himself the more important relations of the various organs, vessels, and nerves, and supplement any drawings or notes he may have made of his personal observations in the dissecting room. Many of the drawings have been made from dissections specially prepared for the purpose by Dr. Robert Walmsley and other demonstrators, and represent parts which are not usually displayed in the course of routine work, thus forming a valuable supplement to the knowledge obtained by the customary methods. The sections dealing with the central nervous system, head and neck, and thorax are particularly useful, and if the plates are not allowed to supplant individual dissection they should prove a valuable pictorial guide and memorandum of the fundamental anatomy of these regions. Some of the plates, however, in Sections III and IV—for example, Abdomen 6, and Pelvis 21 and 23—err, perhaps, too much towards the diagrammatic side, and would thus be of little or no value to the surgeon from the standpoint of practical work. The great majority of the drawings are wonderfully accurate and good, and it is perhaps hypercritical to draw attention

[3] *Manchurian Plague Prevention Service Memorial Volume (1912–1932)*. Edited by Wu Lien-Teh. Shanghai, China: National Quarantine Service, 2, Peking Road. (Pp. 469; illustrated.)

[4] *Fifty Years of Medicine and Surgery: An Autobiographical Sketch*. By Dr. Franklin H. Martin. Chicago: Surgical Publishing Company. 1934. (Pp. xxvi + 499; 43 illustrations.)

[5] *Illustrations of Regional Anatomy*. Five Sections: *Central Nervous System: Head and Neck: Abdomen: Pelvis: Thorax*. By E. B. Jamieson, M.D. Edinburgh: E. and S. Livingstone. 1934. (203 plates. 30s. net, postage 9d.)

to any defects which one may observe ; in Plate 15, Abdomen, however, the interrupted line indicating the body of the gall-bladder appears to be behind instead of in front of the second part of the duodenum. But such slight imperfections are remarkably few, and we consider that the " Illustrations " will supply a long-felt want to the present-day student, whose time is so greatly encroached upon by the growth of other subjects of the curriculum.

We welcome the publication of a second edition[6] of Professor T. WALMSLEY'S *Manual of Practical Anatomy* (Part I). The scope of this edition has been widened by including descriptions of the examination of the living subject, and the author has added much useful information, accompanied by valuable practical comments in the introductory paragraphs on general anatomy. In a preliminary statement, which appears in the preface to this edition, Professor Walmsley expresses the hope that this " directory of dissection " may indicate the form of knowledge and standard which the student should aim at acquiring. How high this standard is, is gradually revealed by a careful perusal of the pages that follow ; they are full of incidental allusions to many interesting points of applied anatomy, which he will find a most valuable introduction to his later clinical studies. He will also learn, at an early stage of his work, to correlate structure with function, and to appreciate the interaction of different systems—for example, skeletal, articular, and muscular. Some excellent *x*-ray photographs, in different positions, of the articulating bones are included, which are accompanied by outline sketches, serving as a key to their interpretation ; and there are also similar outline drawings of skeletal parts, which it is intended should be completed by the insertion of muscular attachments, the relative position of the principal vessels and nerves, lines of epiphyses, and names of parts. The nomenclature is that recently adopted by the Anatomical Society of Great Britain and Ireland, and we are glad to note that in most cases the English equivalent of the Latin term is made use of. The book is a sincere attempt to provide a dissecting room manual which will form a reliable guide to sound practical work, without being overburdened by unnecessary detail, and we feel sure that it will meet with well-merited appreciation.

VOLUNTARY STERILIZATION

Dr. C. P. BLACKER improves in methods of argument and clearness of exposition, and his book on *Voluntary Sterilization*[7] is in these respects the best he has written. It is intended mainly for the layman, but certainly contains, as the author suggests, " features of interest for medical men." There are chapters dealing with the historical, legal, and surgical aspects of the subject, with hereditary defects and diseases, and with some objections to sterilization and the safeguards required. All these are written straightforwardly and without undue bias, though naturally there is an avowed point of view, and there are some very tendencious statements. For instance, some striking examples of bad family history are given, which do not, however, provide sufficient grounds for generalization ; and there is a strong criticism of a note on " heredity " in the report of the British Medical Association's Committee on Mental Deficiency which, though verbally justified, is not really valid unless that note is completely isolated from its position and context. Undue importance appears to be attached to some investigations by Mr. E. J. Lidbetter and to the writings of Mr. P. Popenoe, but the author fairly draws attention also to the more scientific books by such workers as Dr. L. S. Penrose and Mr. S. P. Davies. Dr. Blacker, both for himself and on behalf of the Eugenics Society, definitely supports voluntary as opposed to compulsory sterilization, and approves *in toto* of the Report of the Brock Committee.

[6] *A Manual of Practical Anatomy. A Guide to the Dissection of the Human Body.* In Three Parts. By Thomas Walmsley. Part I, *The Upper and Lower Limbs.* Second edition. London: Longmans, Green and Co. 1934. (Pp. 376 ; 117 figures. 12s. 6d. net.)

[7] *Voluntary Sterilization.* By C. P. Blacker, *M.C.*, M.A., M.D., M.R.C.P. London: H. Milford, Oxford University Press. 1934. (Pp. 145. 5s. net.)

Notes on Books

Die Zuckerkrankheit,[8] by Dr. BERTRAM, is one of the most comprehensive yet short and practical manuals on diabetes for students and practitioners that have yet appeared in German. The unit of his diet system, it is interesting to note, is 20 grams of bread (12 grams carbohydrate), and equivalent amounts of various carbohydrates in fruit or vegetables are based on this unit. This is more simple and flexible than most German diet systems, and he prescribes mostly from 70 to 120 grams carbohydrate a day, usually giving only enough to keep ketosis absent. All oral " insulin " preparations—even more numerous in Germany than in this country—are characterized as useless.

The publishers of the *Sportsman's Library*[9] point out that most of the volumes of the Badminton Library are out of print, and that there is no similar series available to-day at a price within the reach of all purses ; to meet this need they have enlisted a band of experts. The series is very complete and the print is of good size. The first four volumes promise well. *Riding and Horsemanship* (vol. i), by WILLIAM FAWCETT, hunting editor of the *Field*, and *Sea Fishing* (vol. iii), by Major P. LEA-BIRCH, are both in excellent hands. The author of *Coarse Fishing* (vol. ii), Mr. A. J. RUDD, is clerk of the Norfolk Fishery Board, and so knows all about his subject: he devotes three chapters to an account of the life-history and habits of coarse fish which is new and interesting. The practical part, on tackle and the method of using it, is well dealt with. *Gun Dogs and their Training* (vol. iv), by H. ATWOOD CLARK, is most entertaining, and his reflections on the breeding, rearing, and training of pointers, setters, retrievers, and spaniels are of very practical value.

In a small book entitled *The Rheumatic Diseases*[10] Dr. G. D. KERSLEY gives a summarized description of the various forms of chronic arthritis and of fibrositis, together with chapters on acute rheumatism, gout, and physiotherapy. The information, necessarily limited in its scope, follows conventional models, and is carefully compiled. The handbook may claim a place as an elementary introduction to the subjects with which it deals, and some of the sections on treatment may be helpful to the junior practitioner.

The latest edition of the *Annual Charities Register and Digest* reflects the widespread interest which is being taken in maternity and child welfare. Information on administrative agencies, maternity and child welfare clinics, maternity homes, children's hospitals, etc., which was previously scattered through several different sections of the work, has now been collected into one under the heading of " Maternity and Child Welfare." Copies of this very useful book may be obtained from the Charity Organization Society, Denison House, Vauxhall Bridge Road, S.W. (price 8s. 6d. net).

[8] *Die Zuckerkrankheit. Leitfaden für Studierende und Ärzte.* By Ferdinand Bertram. Leipzig: G. Thieme. 1934. (Pp. 94. M. 5.80.)

[9] *The Sportsman's Library.* London: Philip Allan and Co., Ltd. 1935. (Forty-eight volumes, 5s. each.)

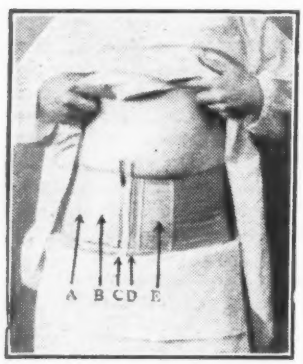
[10] *The Rheumatic Diseases. A Concise Manual for the Practitioner.* By G. D. Kersley, M.A., M.D., M.R.C.P. London: W. Heinemann (Medical Books) Ltd. 1934. (Pp. 88 ; 7 plates. 6s. net.)

Preparations and Appliances

IMPROVED WOUND SUPPORT AND DRESSING

Dr. O. DE MUTH of Vancouver has designed a special adhesive-plaster-cum-elastic belt for immediate post-operative application to laparotomy wounds. Taking the place of an ordinary wound dressing, this appliance aims at overcoming the problem of abdominal wound dehiscence and hernia. The following account is an abstract from material submitted by the author and taken from his original article in the *Canadian Medical Association Journal* for December, 1934.

Description.—Briefly, the appliance consists of two separate halves connected together over the wound by a zip fastener.



The dressing in use. The wound lies immediately behind the celluloid window. A = Adhesive plaster. B = Elastic webbing. C = Zip fastener mounted on tape. D = Celluloid observation window. E = Elastic webbing of left half.

Each half comprises a large rectangular sheet of adhesive plaster, to the shorter side of which is securely sewn a strip of elastic webbing 1½ in. in width. To the webbing is attached a narrow strip of celluloid, and to this, in turn, is fixed a zip fastener mounted on tape and serving to bring the two halves of the appliance together. It is so arranged that when the two halves are joined up one strip of celluloid protects the skin of the abdomen from the metal and tape of the zip fastener, while the other acts as a kind of observation window, holes in which allow the wound to be probed and any discharge to escape.

Technique.—The abdomen is closed in layers in the usual manner with catgut, a fine silk suture being employed for the skin. The wound is then painted with iodine, and if desired a gauze strip is placed over it. The appliance, the central portion of which has been sterilized by washing with 1 in 100 carbolic or weak lysol, is then applied *with the zip fastener closed*, and with the elastic webbing well on the stretch. Each sheet of adhesive plaster is tightly fastened on to the abdominal wall; holes may be made in it to admit air, or it may be cut into horizontal strips for better application. The appliance is then left *in situ*.

Rationale.—It is stated that this simple wound support will lessen the strain on the sutures, thereby relieving wound pain. The diminution of the suture tension on the tissues in its turn lessens the tendency towards wound excretion, infection, and necrosis; it also prevents wound separation, hernia, and dehiscence. The elastic pull on the deeper structures through the skin, superficial fascia, areolar tissues, and deep fascia to the muscles and their fascia and peritoneum, keeps the edges of the wound in constant apposition. The circulation to the wound edges is hence improved, thereby greatly promoting rapid and firm healing. Most of the post-operative wound strain and distress caused by sneezing, hiccuping, coughing, vomiting, and gaseous distension can be overcome by applying this support, while less suture material and specially treated catgut will be found necessary. The sutures should be pulled just tight enough to approximate the tissues they grasp. This appliance can be made to any size and strength desired. It is easily applied to all post-operative abdominal or thoracic wounds—it is an ideal dressing following thoracoplasty. Several narrow supports with strong elastic may be used with marked advantage in the case of compound fracture wounds where skin traction is preferable to skeletal traction.

Results.—Since March, 1934, Dr. De Muth has used it for thirty patients who had had major abdominal operations. They were allowed out of bed on the second or third day, and some were able to walk. Many left hospital in half the usual time. They were suffering from common abdominal complaints, such as appendicitis of various grades—including two with perforation—cholecystitis, bowel obstruction, gastric and duodenal ulcers, carcinoma and fibroids of the uterus, salpingitis, large ventral hernia, and Caesarean section.

COMBINED TONGUE DEPRESSOR AND TONSIL EVERTOR

Dr. C. G. GIBSON (Launceston, Cornwall) writes:

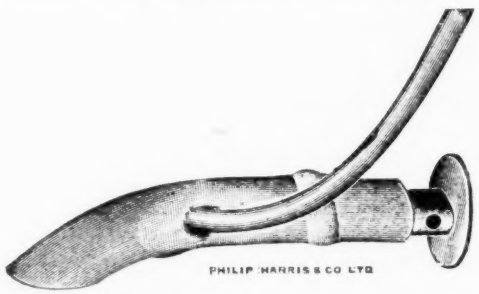
After many years' experience, I consider the appliance shown in the accompanying figure to be a simple and efficient instrument for mouth examinations, and particularly for investigating and clearing out septic pockets in the tonsils; and, in my opinion, if better known, it would be carried by many general practitioners.

Essential points in the instrument are: (1) Total length not too long for carrying in waistcoat or side pocket. (2) The round handle. (3) The perfectly smooth, blunt, and rounded end, which will not wound by either cutting or scraping the mucous membrane of the mouth or tonsil. (4) The shallow, smooth grooving, which is sufficient to facilitate the removal from the mouth of any septic material which has been squeezed out of septic tonsils.

AIRWAY FOR NASAL OPERATIONS

Mr. B. SEYMOUR JONES (surgeon to the Ear and Throat Hospital, Birmingham) writes:

The airway illustrated is a modification of the well-known Phillips airway, with the addition of a lateral tube 14 inches in length for the administration of ether pumped in by a machine. It was devised to remove the inconvenience of curved metal tubes or rubber catheters inserted down the airway from the front. These tend to obstruct the exit of air and collect mucus, and are in the operator's way.



The lateral tube enters the main airway just above the bend, and the anaesthetic vapour impinges on the opposite wall before emerging at the distal end, giving an even distribution. In practice, the anaesthesia approximates to an intratracheal type; *inter alia*, it has been observed that the patient requires much less and there is more economy of ether. I have found these airways of great service in Caldwell-Luc and endo-nasal operations, septum operations, and cartilage grafts for depressed bridge of the septum, as the lateral tube can lie in the angle of the mouth well out of the way. Right and left variations and children's size are made.

They can be obtained from Messrs. Philip Harris and Co., Ltd., Edmund Street, Birmingham.

VITAMIN C: ASCORBIC ACID

Redoxon "Roche," crystallized vitamin C (Hoffmann-La Roche) is a preparation of synthetic ascorbic acid. The substance is put up in tablets, each of which contains 50 mg. of *l*-ascorbic acid. This quantity is equivalent to the vitamin C content of a large orange. In 1932 Szent-Györgyi showed that the hitherto mysterious substance vitamin C was a quite simple organic acid—namely, *l*-ascorbic acid. A method of synthesis was soon discovered, and now the substance has been produced on a commercial scale. Hitherto the vitamin has only been available in small quantities, and little has been known of its pharmacology except its action in preventing and curing scurvy. Now that it is available in any quantity desired it will be possible to investigate more fully its therapeutic actions. Suggestive results have already been obtained in infantile anaemia, in various haemorrhagic conditions, and with various pathological pigmentations. At present ascorbic acid is not known to produce any toxic effects when given in intensive doses.

TO MELBOURNE AND BACK

PART II.—THE CANADIAN ROUTE

On the late afternoon of Friday, July 26th, the Canadian Pacific liner *Duchess of Richmond* will leave Liverpool bound for Montreal via Belfast, and a memorable experience will have begun for those members of the British Medical Association who have elected to take the Canadian route to the 103rd Annual Meeting in Melbourne. This fine vessel, one of the "Duchess" liners, needs little introduction to Atlantic travellers, but for those who have never before made the crossing her beautiful appointments, and the quiet comfort and steadiness she displays, will come as something of a revelation.

Life aboard an Atlantic liner is a most pleasant thing, and its interest culminates after five days of open ocean in a wonderful thousand-mile journey up the salt tidal waters of the St. Lawrence River, which is actually a hundred miles wide across its mouth, at Anticosti Island. The ship glides past the quaint old-world French Canadian villages which lie along the shores, and then, as the river narrows and bends, sharply there breaks on the vision old Quebec, the "Gateway of Canada," in all her beauty and charm. This city, dominated by the massive Château Frontenac, is a fitting introduction to the Dominion. A cantilever bridge spans the St. Lawrence here, and after another 180 miles of river voyaging the visitors arrive, on the morning of Saturday, August 3rd, at Montreal. This city, which stands on an island in the river, is Canada's largest, and the greatest wheat-exporting centre of the world. After arrangements have been made for bonding the baggage, visitors will enjoy a drive to see the most interesting features of Montreal, absorbing something of the atmosphere of this fine city, with its 300 years of history.

THE NIAGARA FALLS

At 10.45 p.m. they will board the train for Toronto, second city in the Dominion, arriving there next day in time to take the early morning boat trip across Lake Ontario to Niagara Falls, which will be reached at 11.20 a.m. The Niagara River, which carries the waters of four out of Canada's five Great Lakes, is split into two by Goat Island, and thunders down towards Lake Ontario in two mightly cascades—the Horseshoe Falls on the west of the island, and the American Falls on the east. The remainder of the day will be available for enjoying the Falls from different vantage points, and then the party will return across Lake Ontario to Toronto to stay the night in the largest hotel in the British Empire, the Royal York. Monday will be spent in seeing something of Canada's dominant industrial centre, with its skyscrapers, the Empire's highest buildings, its factories, parks, and famous University, and its harbour, where the waterfront on the lake has been remade for ten miles.

ACROSS THE GREAT LAKES

The second stage of the Canadian trip will begin at 4.40 in the afternoon, when the visitors will leave by train for Port McNicoll. Here they will board one of the Canadian Pacific steamers for a delightful two-day voyage across the blue waters of Lake Huron, through the lovely St. Mary's River, and over the broad expanse of Lake Superior, the largest body of fresh water in the world, to Fort William. A call will be made at Sault Ste Marie, where the ship passes through the "Soo" canal, and is lifted 18 feet by the great lock, which adjusts the difference in level between the two lakes.

The lake steamer, which is Clyde-built, something after the style of transatlantic liners, has four decks, and can accommodate 300 passengers. The cabins are comfortable and roomy, and the cuisine is typical of the famous transportation service of which this steamer forms a unit. At Fort William, which is reached after lunch on Wednesday, a line of immense grain storage elevators stretching along the harbour front gives an idea of the volume of wheat which pours through this outlet from Western Canada to the Atlantic seaboard and Europe's markets.

THE ROCKIES AND VANCOUVER

That evening the party will take the train across the prairies, travelling through the provinces of Ontario, Manitoba, Saskatchewan, and Alberta. This is the "Granary of Empire," and the landscape presents one continuous line of farms and grain fields, interspersed by thriving towns, until, near Calgary, the Rocky Mountains loom almost dramatically into view. Banff, in the heart of the Canadian Rockies, will be reached on Friday morning, and here the visitors will remain until Sunday, making their headquarters at the beautifully situated Banff Springs Hotel. The rest of Friday will be at their disposal, and for their enjoyment there will be outdoor and indoor swimming pools, tennis courts, horses to ride, and a golf course set in ideal surroundings. Saturday will be given up to a visit to Lake Louise. The motor road lies through mile after mile of beautiful mountain scenery, via Johnston Canyon, dominated by the gaunt grey turrets of Castle Mountain, past Morain Lake, the Ten Peaks, and Mount Temple, to Lake Louise, surely one of the world's most perfect scenic gems. This sheet of tranquil water presents a spectacle of changing colour which is quite indescribable. At the far end is the dazzling Victoria Glacier, and the picture is framed by spruce-covered mountain sides, with cliffs that drop sheer into the lake, and by lofty snow-capped peaks which guard the far skyline.

The travellers will leave the "Pearl of the Rockies" for one more night at Banff Springs, and on Sunday morning take train for Vancouver. This part of the route is across the Great Divide, the highest elevation of the Canadian Pacific Railway, and through the famous "spiral tunnels," a marvellous engineering achievement, where the railway is made to double back upon itself twice in its tortuous course through the mountains.

Beyond the town of Field the railroad runs along the valley of the turbulent Kicking Horse River as far as Golden, where the scenery reaches a climax of mountain grandeur in the Selkirks, with its towering array of peaks culminating in the lofty pinnacle of Sir Donald. The train passes right through Mount Macdonald by the Connaught Tunnel—the longest in the American Continent. It emerges at Glacier Station and follows the hurrying Illecillewaet River, and so to Revelstoke and through Eagle Pass, where stands an obelisk commemorating the driving of the completing spike in the Canadian Pacific permanent way on November 7th, 1885. Then comes the valley of the Thompson River until the famous Fraser Canyon is reached, where the pent-up waters of the united Thompson and Fraser Rivers roar down towards the broad, level valleys of British Colombia.

And so on Monday, August 12th, at 9 a.m., the travellers reach Vancouver, and in the sheltered harbour of this picturesque seaport is the s.s. *Aorangi*, of 23,000 tons, the latest addition to the Canadian–Australian service, which is to sail with them the same afternoon for San Francisco, a day's run distant. On Wednesday they will be able to exchange experiences with colleagues who have crossed the United States, and who will join them for the remainder of the voyage.

M. L. Pondal (*Le Nourisson*, January, 1935, p. 17) records two small outbreaks of epidemic jaundice which took place at Tucuman, in the Argentine Republic. Six cases occurred from March to May and ten from December, 1932, up till May, 1933. With the exception of one, which occurred in an elderly woman, all the cases were in infants and young children. The outbreaks were mild, as all recovered within a few days. The Widal reaction for enteric fever and examination for spirochaetes and haematozoa were invariably negative even when there was a history of malaria and enlargement of the spleen. In a large number of cases, however, *B. coli* was found in the urine, so that Pondal is inclined to attach some aetiological importance to this finding.

British Medical Journal

SATURDAY, FEBRUARY 23rd, 1935

A SALARIED SERVICE OF MIDWIVES

During the last three months our correspondence columns have borne eloquent testimony to the deep interest excited by the subject of maternal mortality. Unfortunately the correspondence has also very clearly revealed the prevalent confusion of thought and discordance of view with regard to the dominant causes of this mortality and the measures required to deal with them. The appearance of definite proposals for the reorganization of an important branch of the maternity service is therefore particularly opportune as being calculated to divert our thoughts from ineffective disputation to the consideration of constructive measures. We commend to our readers a careful study of the proposals of the Joint Council of Midwifery for the establishment of a salaried service of midwives which are described at page 371 of the present issue of this *Journal*.

Since the passing of the first Midwives Act in 1902 the service rendered to the community by midwives has steadily increased in extent and in importance. At present approximately 60 per cent. of all confinements in England and Wales are attended by midwives, while in a rising proportion of cases they seek and obtain the assistance of a medical practitioner. The midwife is now expected to assume a share of responsibility for ante-natal supervision, and the Departmental Committee on Maternal Mortality and Morbidity went so far as to recommend that midwives should be trained to take blood pressure readings as a routine procedure. In view of these facts it is a grave reproach that the majority of midwives in independent practice have great difficulty in earning a bare livelihood while at work, and have no chance whatever of making provision for sickness or for old age. In recent years, as a consequence of increased unemployment, it is believed that the average earnings of the practising midwife have fallen below £80 a year, while in certain areas they do not exceed £50 a year. In contrast, the lot of the midwife who is employed by voluntary associations, or in a few instances by local authorities, is relatively favourable. She receives a moderate salary with allowances, her employment is continuous, and a small retiring pension is provided.

It has become evident that only women of good education and responsible character can be expected to discharge the important duties which are now required of midwives. There is general agreement that an extension of the midwife's training from one to three years is very desirable, but unless the conditions of her employment can be materially improved women of the requisite quality will not be attracted to the service. The thesis upon which the Joint Council of Midwifery bases its proposals is that reorganization of the midwife service is urgently needed in view of the extent and growing importance of the midwife's work, and that the only way in which this can be done is to place the employment of midwives on a salaried basis, partly by the creation of a municipal service under the control of local authorities, and partly by supporting and extending the existing salaried services of voluntary nursing associations. The advantages to be derived from this plan by the midwives themselves are sufficiently obvious, but many public advantages would also accrue. Thus the establishment of a salaried service would solve the problem of providing skilled attendance for the patient who cannot afford to pay an adequate fee, and for the "necessitous" patient who cannot pay at all. Further, it is proposed that midwives in the service should be available to act, when required, as maternity nurses for patients who engage a medical practitioner for the confinement but are unable, in addition, to pay for a trained nursing attendant. As a result of this provision the employment of a "handy woman" would be entirely without excuse, and this undesirable personage would, no doubt, speedily disappear. In order that harmonious co-operation may be secured from the outset, it is provided that the local authority should consult with the hospitals, with the voluntary associations, and with the medical practitioners in its area before establishing a municipal midwives service.

It is regarded as an essential feature of the scheme that public money should be provided to compensate midwives who are not accepted for enrolment in the municipal service, and who find that they cannot retain their practice under the changed conditions. Acceptance of compensation would involve the retirement of the midwife from practice in the area of the local authority concerned. It is also proposed that the local authority should be empowered to secure the retirement, under compensation, of aged and infirm midwives who, although unfit for work, continue in practice because they have no other means of livelihood. The effect of these provisions would be to remove considerable numbers of the less efficient midwives from practice, and in consequence to raise the general level of efficiency.

The committee of the Joint Council of Midwifery by which the report was prepared is strong in the practical knowledge of its members, all of whom have personal experience of domiciliary midwifery, of the education and supervision of midwives, and of the control of public maternity services. Their proposals merit the most careful consideration, and should these meet with general approval it is not too much to hope that the legislation required to give effect to them will not be long delayed.

HEALTH INSURANCE IN AMERICA

On the principle that onlookers see most of the game it is possible that those who on this side of the Atlantic have been watching with keen and intelligent interest the approach of the United States of America to health insurance have some advantage over those who are more closely involved in the details of the social, economic, and professional struggle on the spot. To observers with this advantage two points in the situation have seemed evident. The first is that the whole trend of President Roosevelt's policy in such matters, together with the volume and effectiveness of the propaganda of a number of powerful, though predominantly lay, organizations interested in public health provision, made it almost certain that definite and authoritative proposals for a scheme of national health insurance would mature at an early date. The second is that the attitude of a large proportion of the medical profession in the United States, as expressed officially through the American Medical Association, in opposition to any such scheme was based largely upon misapprehensions of the character of the national health insurance system in Great Britain, and of the relation of that system to medical practice in general. Friendly efforts have been made in this *Journal*, and through other channels, to dissipate such misunderstandings and to place the experience gained in this country at the disposal of our American colleagues, and these efforts, together with the march of events, appear now to be achieving success.

The attitude of the medical profession in Great Britain since the year 1911, in which the proposals for national health insurance were introduced, has passed through a series of changes. At first it was one of strong opposition to the scheme as originally proposed owing to certain features which were held, and rightly held, to be subversive of professional tradition and detrimental to the public interest. Then followed negotiations and pressure which resulted in removal of these major objections ; then acceptance of the scheme by a large body of the practitioners concerned and, a little more tardily, by the organized profession officially ; then a long period of practical co-operation with a view to amending the scheme in important details and so making it work more smoothly and advantageously. Now the attitude of the profession as a whole is one of willing acceptance of the system as thus evolved, not merely as a working arrangement which confers benefit both on the practitioners and on insured persons, but as a bulwark against any movement to provide medical advice and treatment by means of a whole-time salaried service. It is clearly unnecessary that all these stages should repeat themselves in America. Though no doubt modifications may be necessary in view of the different circumstances of the two countries, the main essential principles and the most important details of administration have been established by British experience and are available for American adaptation.

There are indications, indeed, that matters are working out according to the pattern which, from this side, appeared likely. In the *Journal of the American Medical Association* for January 26th last there is an admirable statement as to the reference made to health insurance in President Roosevelt's message to Congress, and as to the main lines of the advice likely to be given him on March 1st next on this matter by the professional advisory groups and the technical staff of the Committee on Economic Security. Details of these main lines of the suggested plan must be sought in the article referred to. It is satisfactory to note here that they forecast a scheme of compulsory contributory insurance intended to be nation-wide, but State-provided and State-administered ; that all the major principles and features on which the medical profession of Great Britain has insisted seem likely to be established and preserved in it, though the suggested income limit for insured persons is much higher—$3,000 a year—than in this country ; and that such editorial comment as the *Journal of the American Medical Association* ventures upon indicates a moderate and reasonable rather than an intransigent attitude.

It is probable that the imminence of legislative proposals of this character is more immediate than the American Medical Association had anticipated. However that may be, the statement is now made that "arrangements have been effected for close co-operative study between the advisory committee's technical staff and the experts of the American Medical Association." And our colleagues in the United States may well be encouraged by the fact that the much greater experience of the British Medical Association in collective negotiation and bargaining indicates that the power of the organized medical profession, reasonably exercised, is very effective.

SURGICAL TREATMENT OF BRONCHIECTASIS

Writing in this week's *Journal* (p. 350) on the surgical treatment of bronchiectasis, Mr. Graham Bryce says: " I hope, however, that enough has been said to show that the day of helpless inactivity is past, and that it is possible to restore to health and self-respect not a few of those who are afflicted by a condition which is crippling, frequently lethal, and all too often repulsive." Mr. George Mason's account in our last issue (p. 299) of removal of the entire lung in two cases of unilateral bronchiectasis proves beyond doubt that helpless inactivity *is* past. When one recalls the failures attending pulmonectomy before 1931, such success is a measure of the rapid advances that are being made in thoracic surgery. To eradicate a disease completely at one swoop of the knife appeals to the dramatic sense. The excision of one or more lobes of a lung, as recently as four or five years ago, carried such a high mortality that no one felt justified in recommending it except as the only hope in cases of malignant disease. One of the chief difficulties was post-operative infection of the pleural cavity, but in 1929 Brunn of San Francisco pointed out that no serious infection

took place if early expansion of the remaining lobe was encouraged. By closing the chest tightly at the end of the operation, and by employing negative pressure drainage, the remaining lobe expands within a few hours to fill the whole of the hemithorax, and becomes adherent before widespread infection can occur. Brunn's idea stimulated Shenstone and James of the Toronto General Hospital, who developed a new method for closing the pedicle after amputation of the lung. To these two Canadian surgeons must be given the credit for perfecting and popularizing the present one-stage lobectomy operation. Recently Tudor Edwards and Price Thomas[1] have reported the results in their first forty-eight cases. In this paper they review other methods of treatment for bronchiectasis. Non-operative procedures such as drugs, postural drainage, and bronchoscopic aspiration, while they may enhance the patient's comfort, can never be regarded as other than palliative. They are, however, the only means of treating bilateral cases. In operative measures the choice lies between collapse of the lung and radical extirpation of the diseased tissue. While in no way condemning collapse methods completely, they feel that artificial pneumothorax or phrenicectomy may prove of considerable value in the early stages and so prevent the development of a more severe lesion. Thoracoplasty is still the method of choice in complete unilateral bronchiectasis, where it gives "a definite probability of considerable amelioration"; but when the bronchogram shows that the disease process is confined to one lobe, then unquestionably lobectomy is to be preferred. Magill, who contributes a section on anaesthesia in this article, has considerably added to the safety of the operation by his method of intubation with a large endotracheal rubber tube inserted through the nose, for anaesthesia, and by a coudé gum-elastic catheter, which is passed through the mouth down to the main bronchus on the affected side so that secretions which are squeezed out during the operation can be removed by suction. Several surgeons have reported their results of lobectomy in a small series of cases, from which it is often misleading to speak in percentages. The series now published by Tudor Edwards and Price Thomas dates back to 1929, and the forty-eight cases that they are able to report form probably the largest series yet published. They have only had four deaths directly due to the operation, giving an operative mortality of 8 per cent., and of the three other deaths one was due to brain abscess and two to tuberculosis in the opposite lung some months after the operation.

CEREBRAL ANGIOGRAPHY

The remarkable demonstration of cerebral angiography given by Professor Egas Moniz at the International Neurological Congress of 1931, did little more than outline the possibilities of this method in the diagnosis of intracranial disease.[2] At that time he had used only injections of sodium iodide, which, in addition to their danger in atheromatous patients, had the disadvantage that they showed only the large vessels lying directly in the line of the injection. The substitution of "thorotrast," a colloidal suspension of thorium bioxide, has removed most of the dangers and greatly increased the value of the method. As thorotrast mixes slowly with blood it is possible to follow its passage, by successive radiograms, from the intracranial arteries to the veins and venous sinuses. This improvement in technique not only increases the value of the method in the localization of cerebral tumours (since the veins as well as the arteries may be deflected from their normal position by a tumour mass), but it also adds to our knowledge of the rate of the cerebral circulation in normal and pathological conditions. It has been found, for instance, that the blood passes through the cerebral capillaries much faster than it does through the vessels of the face or the limbs. In cerebral arteriosclerosis, however, the rate of passage may be much retarded, so that when a second radiogram is taken four seconds after the first the injection may still be in the arteries instead of in the capillaries and veins. A further advance has been achieved by the technique of injecting the vertebral artery and its branches from the common carotid, so that the method may now be used in the diagnosis of cerebellar tumours and aneurysms of the basilar and posterior cerebral arteries. The exactitude of localization achieved by cerebral angiography, and the striking way in which aneurysms and vascular tumours are revealed by this new method, far surpass the results obtained by ventrilography and encephalography after air injection. Its freedom from painful sequelae gives it a further advantage over these methods, and if its safety, as indicated by the first reports from Portugal, Germany, and Great Britain, is proved in further series of cases, its position as a valuable agent in neurological diagnosis seems assured.

A SURVEY OF TYPHUS

The November–December issue of the Epidemiological Report of the Health Section of the League of Nations contains a survey of the present distribution of typhus fever throughout the world for 1933–4. Generally speaking, owing largely to economic factors, there has been a remarkable recrudescence of the disease, so that it has reached epidemic proportions in many countries and territories where it had hitherto been endemic and sporadic. This was particularly the case in Morocco, Algeria, Tunisia, Egypt, the Union of South Africa, Basutoland, and the Urundi Territory in Africa. In Algeria the incidence in 1933 was double that of 1932, though there was a considerable decline in 1934. In Tunisia, where the incidence had been fairly low in 1932 and 1933, in February, March, and April of 1934 there was a severe outbreak. In 1933 Egypt suffered an epidemic which was much more severe than that of 1932, while the 1934 outbreak was a little less severe. The increase in the Union of South Africa was presumably due to the agricultural and economic crisis, the poverty-stricken and lice-infested natives leaving Basutoland in large numbers for work in the Orange Free State. In America endemic typhus continues to spread, and the epidemiological problem is complicated by its recently reported coexistence with Rocky Mountain spotted fever in several Eastern States. In Mexico the typhus mortality is still high, but its geographical distribution remains about the same. In South America there has been a notable increase of typhus incidence in those countries in which

[1] *Brit. Journ. Surg.*, 1934, xxii, 310.
[2] *L'Angiographie Cérébrale: ses Applications et Résultats en Anatomie, Physiologie, et Clinique.* By Egas Moniz. Paris: Masson et Cie. 1934. (90 fr.)

it had existed previously in sporadic form, particularly Bolivia, Peru, and, most of all, Chili, where the cases numbered 15,000 in 1933 and probably reached a similar figure in 1934. In Asia there has not been the wholesale increase in the incidence which occurred in Africa and America. There was, however, a certain increase in Chosen in 1933, followed by a decline in 1934, and in the Asiatic territories of Soviet Russia there was a marked recrudescence in the first six months of 1934. In Europe there was an almost general increase in typhus incidence in those countries where the disease was prevalent in sporadic or endemic form—namely, the European portion of Soviet Russia in the first half of 1934, Poland in 1933 and 1934, Czechoslovakia in 1933, in certain parts of Hungary in 1933 and 1934, Rumania in the first quarter of 1934, particularly Bessarabia, Bulgaria in 1934, and Yugoslavia, which has had the highest increase in typhus incidence of all the countries of Eastern and South-Eastern Europe during the last two years. Lastly, as regards Australia, there was no marked change in the incidence of the disease.

"LOCKING" OF MUSCLES?

A. Fordemann,[1] an orthopaedic specialist, has observed nearly two-score cases which have made him raise this question in the title of his paper. He believes in the possibility of muscles "locking" as a sequel to apparently quite trifling incidents, such as a false step or some sudden, unexpected movement. The immediate result is pain followed by loss of free movement. If the shoulder is involved the patient can hardly lift a weight or even raise an arm in the act of brushing the hair. This condition is usually dismissed as rheumatic, the patient migrating from one doctor to another, and obtaining no relief from their much-mixed treatment. Even when there is no question of financial compensation he is liable to be stamped as a malingerer. The author confesses to his inability to demonstrate beyond question his explanation of this phenomenon. He believes, however, that in a group of muscles one or other of them contracts a moment earlier or later than it normally should; and the result of this faulty timing is a displacement of the muscle concerned, with "locking" as a sequel. He cannot explain why this muscle does not promptly fall back into place again. Although such serious ailments as sciatica, lumbago, and coxitis can be simulated by this condition, the pain of which may cause sleepless nights, it may quickly yield to appropriate treatment. M. Lange,[2] who is professor of orthopaedics in Munich, refuses to subscribe to Fordemann's doctrine with regard to the incarceration or displacement of a muscle which has suddenly become painful after some apparently trifling movement. But the author agrees with Fordemann about treatment. Properly executed massage, or massage-like manipulations, may suffice to dispel the "locking" and to restore the normal range of movement completely or to a certain degree. But this prompt recovery does not justify the assumption that a muscle has been displaced and that it has suddenly slipped back again into position. The relief from pain must rather be traced to painful changes in the muscle having been dispelled by the massage. Be the explanation what it may of the pathology of this condition and of the success following massage, there can be no doubt as to the frequency of such painful "locking." And the doctor who knows how to examine muscles and how to give massage may often achieve success where his predecessors have failed.

[1] *Munch. med. Woch.*, December 27th, 1934, p. 2003.
[2] Ibid., December 27th, 1934, p. 2005.

INCOME TAX: THE CASH BASIS

The difficulty of making an income tax return which will comply with the legal requirements and at the same time give the taxpayer himself all the relief to which he is entitled is often the subject of strong comment. No doubt other professions and trades have their own peculiar difficulties; for the medical man the chief characteristic is the fact that so far as private fees are concerned, he often has to wait a long time for payment, and in many cases would be hard put to if he were required to value his outstanding debts. A convenient, and at one time almost universal, method of avoiding that difficulty in calculating a theoretical income is the adoption of the "cash basis"—in distinction to the "earnings basis"—in computing the gross income of a practice. Any other method would in the great majority of cases very much increase the difficulty of making proper returns, and in the long run would benefit neither the Exchequer nor the practitioner. The profession has consistently claimed that, apart from exceptional circumstances, the acceptance of the "cash basis" returns from medical practitioners is mutually advantageous, and we have understood in the past that the broad principle at least was accepted by the authorities. In that connexion we may refer to a note in a contemporary journal[1] dealing with a case in which "a doctor who has been assessed on a cash basis for many years . . . has been told by the inspector of taxes that it is proposed to change the assessment in future to the earnings basis." Certain judicial decisions and dicta were quoted and discussed, but we do not propose to examine these in detail, because we are, and always have been, of opinion that on a strict legal construction of the statutory rules the earnings basis is correct and the cash basis cannot be justified. The matter, in brief, is one for consideration of common sense rather than of law. This becomes fairly clear if we take an extreme illustration—that is, the case of a medical man starting a practice without any pre-existing connexion. During his first year he will incur twelve months' expenses in surgery and waiting room maintenance and attendance, travelling, telephone, and so on. How many months' income will he have *received* by the end of the year? In such a case the cash basis would not adequately reflect a year's income. Or take the case of a change in a partnership, when the new members elect to have the reconstructed partnership regarded as a new concern and as such exclude from the new firm's books the cash collected from debts due to the old firm. There again the cash basis would give a demonstrably unfair result. (It should, of course, be borne in mind that in such a case the old firm will not be liable to account for tax on the debts collected after the change in the partnership.) So far as our experience goes, inspectors of taxes accept

[1] *Rating and Income Tax*, February 9th, 1935.

the view that apart from " new " practices—including those regarded as " new " owing to changes in ownership—the cash basis is the most effective and convenient method of dealing with medical profits, and its adoption is sanctioned by long-standing practice. It will be a matter of regret and some surprise if the instance quoted by our contemporary should prove to be other than an isolated case of failure to appreciate that fact, or possibly a case into which some special and distinguishing features have entered. In the long run, and in the normal case, the cash basis gives the Revenue all that it is fairly entitled to receive, and we are reluctant to think that the Board of Inland Revenue would give medical practitioners a great deal of trouble in an attempt to ensure a merely theoretical compliance with the statutes. One other point may perhaps be made. The body whose function it is to decide such questions in particular cases is the General Commissioners of Income Tax for the area, and in the absence of any circumstances going to show that the cash basis would be unfair we should confidently expect them to uphold a claim that medical profits should continue to be assessed accordingly.

THE PARATHYROIDS AND ANGIOSPASTIC DISEASES

The function of the parathyroid glands is nowadays identified with the action of parathyroid extracts, and in particular of parathormone. Briefly, the action of parathormone is to liberate calcium from the great calcareous depots of the bony systsem. But any description of the function of the glands cannot stop at this point: the ultimate action and value of this mobilized calcium must be understood. What function does calcium subserve in the circulation? Its importance in blood coagulation and in the contraction of muscle is generally recognized. It is well known that diminution of serum calcium to about 6 mg. per cent. is associated with hyperexcitability of neuromotor mechanisms (tetany). In relation to the sympathetic nervous system calcium acts antagonistically to potassium, the latter being vagotropic and the former sympatheticotropic. On the basis of the effects of calcium on the nervous system we might consider the function of the parathyroids as similarly related to the nervous system. This would lead to the inference that these glands are concerned with the regulation of vasomotor tone, but in point of fact direct evidence of such a relation between the vascular system and the parathyroids has not been demonstrated. Nor has it been found that hypertension is necessarily associated with hypercalcaemia. In spite of this position P. Bastai and G. C. Dogliotti[1] have recently attempted to ameliorate the symptoms of various forms of endarteritis by extirpation of a parathyroid, or, when these glands cannot be seen, by removal of a portion of the thyroid containing parathyroid tissue. As a matter of fact, they do not seem to care if there is parathyroid tissue present or not ; the results are much the same. There was as a consequence of this treatment in some fairly severe cases a more or less marked fall in serum calcium, and a definite cessation of pain, even when the latter had been intense and of long standing. A rise in temperature occurred after operation in the affected part and the sweating mechanism was re-established. In some cases remarkable healing of gangrenous ulcer took place, previous treatment having been ineffective. In certain instances of endarteritis with hypertension a fall in pressure followed the operation. Some of these results have been obtained in cases of scleroderma treated by parathyroidectomy, but this treatment has not, as far as we know, been previously used for endarteritis. The rationale is rather obscure, but it is suggestive that in chronic arthritic conditions vascular disturbances are not infrequent, and that severe ankylosing arthritis has been described in association with scleroderma. Be that as it may, the clinical improvement obtained by these authors in some of their patients merits careful consideration.

[1] *Presse Méd.*, November, 1934.

MENINGOCOCCAL CARRIER RATES

Some very interesting observations have been made by S. F. Dudley and J. R. Brennan[1] on the relation between the meningococcal carrier rate and the appearance of cases of cerebro-spinal meningitis. Working at the Chatham Naval Hospital, they found that between January, 1932, and March, 1933, there were eleven cases of cerebro-spinal meningitis, while the naso-pharyngeal carrier rate at that time was about 13 per cent. During the period March, 1933, to May, 1934, no cases of meningitis occurred, yet the carrier rate was 54 per cent. During the same period at the Royal Naval Hospital, Portsmouth, there were six cases of meningitis with a carrier rate of only 5 per cent. Analysis of the distribution of carriers at Chatham showed no constant relation between the length of service and the height of the carrier rate. For example, the probationers with less than one year's service had a carrier rate of 60 per cent. ; the junior trained staff with less than ten years' service had a carrier rate of 38 per cent. ; while the senior trained staff had a carrier rate of 71 per cent. Nor could any association be made out between the carrier rate and the density of the population. The most senior ratings, with the most spacious sleeping accommodation, had as high a carrier rate (60 per cent.) as the recruits with the worst sleeping quarters. These results are so different from those recorded during the war—though similar to many that have been reported since—that the authors endeavour to explain the discrepancies on the basis of differences in virulence of the prevailing meningococci. In this connexion it is of interest to note that a fairly sudden change in the meningococcal population of Chatham was noticed in about November, 1933, Type II giving place to Type III. The authors are quite clear that a carrier rate of 20 per cent. is not necessarily an indication, as Glover thought, of an impending outbreak of cerebro-spinal meningitis, and that there is no constant relation between the carrier rate and the morbidity rate. They are also of the opinion that any attempt to segregate carriers is a mistake, and may even do more harm than good.

[1] *Journ. of Hyg.*, December, 1934, p. 525.

We regret to learn of the death at Dunedin on February 17th of Dr. Daniel Colquhoun, F.R.C.P., emeritus professor of medicine in the University of Otago, New Zealand.

TREATMENT IN GENERAL PRACTICE

This article is one of a series on the management of some of the major medical disorders met with in general practice

NEW GROWTHS IN THE LUNG

BY

JAMES MAXWELL, M.D., M.R.C.P.

Malignant new growth of the lung is a common condition at the present time. It is unprofitable to speculate as to whether there has been any increase in incidence in the last few years, for our diagnostic facilities have multiplied to such an extent that any statistical comparison with previous periods is full of fallacies, and is unlikely to yield any accurate conclusion. It is sufficient to note that, according to the most reliable published statistics, the condition ranks next to cancer of the gastro-intestinal tract, breast, and uterus.

The great majority of tumours found in the lung tissue are carcinomata which arise in connexion with the mucous membrane of the bronchi. The growth may originate in a main bronchus or in one of the smaller bronchioles embedded in the lung substance. According to the exact site of the growth, there will be various mechanical effects produced which will give rise to certain definite symptoms and signs, the correct interpretation of which should lead to the adoption of appropriate diagnostic investigations; these will be considered later. Early diagnosis is much more important from the point of view of prognosis than of treatment, for the results of all therapeutic measures are so disappointing that an accurate prognosis can be given in the majority of cases as soon as the diagnosis is established.

Symptoms

Recognition of the disease in its early stages is rendered difficult because there are no characteristic symptoms, and the diagnosis must be based on a suspicion of the presence of something more than a simple respiratory ailment. In about one-quarter of the cases the onset of the disease is sudden, and it may closely simulate "influenza," pneumonia, or pleurisy. In these cases it is certain that the growth must have been there for some little time without attention having been called to its existence by any symptoms whatever, and the acute condition may even resolve so completely that the patient may appear to recover his health for a period of several months.

In the majority of cases, however, the onset is insidious, with cough as the most prominent feature. Additional symptoms are occasional pain in the chest, shortness of breath, and blood-streaked sputum. It follows, therefore, that any patient of middle age who develops a persistent cough, especially with slight haemoptysis, should have investigations performed in order to exclude a neoplasm. At times the first symptoms are those of pressure on important structures in the mediastinum, resulting in dyspnoea, dysphagia, voice changes, and oedema of the face and arms. In a comparatively rare group of cases there may be no symptoms, and even no signs of a carcinoma in a bronchus, and attention may be called to its presence by the occurrence of a metastasis in a distant organ: the sites most commonly affected in this way are the liver, pancreas, and central nervous system. Thus cerebral symptoms, spastic paraplegia, or even an obstructive type of jaundice may occasionally be the earliest clinical indication of a primary growth in a bronchus. The symptoms, therefore, are not characteristic until important structures are involved, by which time the opportunity for radical treatment has already passed away. As the condition progresses the symptoms increase in severity.

Cough may result from suppuration distal to the growth, in which case it is often accompanied by copious, and at times offensive, sputum; or it may result from pressure on the trachea, when it assumes the typical "brassy" character, and is not as a rule accompanied by much sputum. When a recurrent laryngeal nerve is involved the cough becomes husky and ineffective; pressure on the trachea is also responsible for the marked stridor which is a feature of the later stages. Haemoptysis is present in nearly all cases at some stage of the disease, but is rarely gross in amount; only very occasionally is haemorrhage severe enough to be fatal. Pain is a common complaint at some stage of the disease, and may be due either to the strain of coughing or to invasion of the pleura by the growth; it may, however, be caused by invasion of the bony chest wall or by the involvement of the posterior nerve roots by secondary deposits. Dyspnoea increases in severity as the disease progresses, and in most cases is the outcome of gradually increasing distortion of the trachea, although in some cases it may be brought about by rapid accumulation of fluid within the pleura; it does not seem to result from actual destruction of lung tissue by the growth.

The other symptoms of intrathoracic pressure, which appear almost entirely when the disease is far advanced, are dysphagia, voice changes or even complete aphonia, and obstructive oedema.

Physical Signs

The physical signs are extremely varied, and depend on the exact situation of the growth and on the presence of secondary changes in the lung, pleura, and mediastinum. Should a main bronchus or a large secondary bronchus be completely obstructed, the lung distal to the growth will collapse, and the physical signs will be diminished movement, impaired percussion note, and weak breath sounds, while the heart and trachea will deviate towards the affected side: in the absence of foreign body, new growth is by far the commonest cause of these phenomena in adults. In a considerable number of cases secondary suppurative changes arise in the lung distal to the growth, and the physical signs may be those of consolidation or even of cavitation, and the condition at this stage may closely simulate primary lung abscess, gangrene, or pneumonia. In the more chronic cases bronchi may become dilated and secondarily infected, the clinical picture resembling bronchiectasis. The pleura is not uncommonly involved, and effusion may complicate the picture in the very early stages of the disease. Clinically there may be no points of distinction from pleural effusion from other causes, and the occurrence of this condition in middle age, without any obvious reason, should always lead one to suspect a growth.

The presence of metastases confirms the diagnosis of malignant disease. In bronchial carcinoma these are most commonly found in the regional glands of the mediastinum,

neck, and axilla, and in the upper part of the abdomen, especially the liver, pancreas, and suprarenals. Metastases in the central nervous system are not uncommon, both in the brain and in the spinal cord. Rarely, cutaneous deposits may appear in the chest and abdomen.

The general condition of the patients varies greatly. Wasting is not so marked, on the whole, as might be expected. The temperature depends to a great extent upon inflammatory complications. Clubbing of the fingers is seen in about one-fifth of the cases, but has no diagnostic significance. Dilated veins over the chest or abdomen are a valuable sign of mediastinal pressure, and result from malignant disease more commonly than from any other cause. It may also be noted that the physical signs in cases of new growth of the lung are almost always confined to the affected side, and this point is sometimes of value in the clinical distinction between malignant and inflammatory conditions.

It can be seen, therefore, that the symptoms and signs are so varied that it is impossible to describe any single characteristic picture of bronchial carcinoma, although the three types which are most common give the physical signs of collapse, suppuration, and pleural effusion respectively, and in these the diagnosis should be made with very little difficulty. It is in the other cases, in which a small growth is present without causing mechanical changes in the chest and possibly very little in the way of symptoms, that adoption of special diagnostic investigations is of the greatest importance, and it is, nowadays, possible in most cases to carry these out in a routine manner, so that an accurate diagnosis is assured in a high percentage of cases.

Methods of Investigation

The only absolute proof of the presence of malignant disease is histological, and the positive value of the different diagnostic methods must be judged to some extent according to whether they fulfil this criterion.

Sputum.—It should be noted that the finding of tubercle bacilli in the sputum does not negative a growth, for occasionally the two conditions may coexist. It is possible that in the future we shall be able to make an absolute diagnosis by the detection of malignant cells in the sputum, but our methods are not yet sufficiently reliable to permit them to be used as a routine.

Wassermann Reaction.—This reaction is positive in about 20 per cent. of the cases of bronchial carcinoma, and little weight should therefore be attached to it. New growth is common, and pulmonary and mediastinal syphilis are extremely rare. In cases of genuine difficulty it may be desirable to give the patient the benefit of the doubt by instituting an energetic course of anti-syphilitic treatment.

Pleural Fluid.—Although sometimes blood-stained, the pleural fluid is more commonly clear, and may have the characters either of an exudate or of a transudate. The only finding of positive value is the detection of Foulis cells, which are a fairly reliable indication of the existence of malignant disease.

X-Ray Examination of the Chest.—This is the most important confirmatory evidence in suspicious cases, and we have now reached a stage in the diagnosis of chest diseases at which *x*-ray examination has become an essential part of our routine. A skiagram should be taken in every case in which there is any suspicion as to the presence of serious underlying disease, even although there are no definite physical signs at the time. It is only in this way that the diagnosis can be made sufficiently early for treatment to be applied with any hope of success. Preliminary observation on the screen is most important in all cases, particularly with a view to establishing the function of the diaphragm on the affected side. Immobility or paradoxical movement, indicative of paralysis of a phrenic nerve, is strong evidence of malignant infiltration. The presence or absence of pulsation is important in the distinction between tumour and aneurysm.

The appearances in the chest vary greatly in different cases. There may be an irregular rounded shadow projecting from the hilum, and composed of a primary growth or of enlarged glands. There may be a mass in the mediastinum, or there may be a shadow, rounded and discrete at times, in the lung tissue itself. In the majority of cases, however, these shadows are merged, or altered by secondary changes. Occasionally the secondary changes are the most obvious part of the picture, and the appearances of pulmonary collapse, lung abscess, or pleural effusion may mask an underlying growth. It must be remembered that radiological appearances are not always conclusive when considered alone, and that the findings must be taken in conjunction with the clinical condition and the results of the other special investigations. Sometimes additional information may be secured by taking a picture after the induction of an artificial pneumothorax, for small tumours may thus be better defined, and intrapulmonary lesions may be readily differentiated from tumours attached to the chest wall.

Bronchial obstruction may be demonstrated after the injection of lipiodol. The value of this method has perhaps been overemphasized in the past, for it is by no means infrequent for a lipiodol examination to fail to demonstrate the obstruction, and more definite information may usually be obtained by bronchoscopy. It sometimes happens, however, that bronchial obstruction is unexpectedly detected by this method when the investigation is being performed with some other end in view. It is important to note, also, that lipiodol in the lung tissue may be prejudicial to *x*-ray treatment if this is to be subsequently employed, and that therefore this investigation should not be undertaken without due consideration.

Bronchoscopic Examination.—This is perhaps our most useful diagnostic method. It can be readily performed under basal anaesthesia, and a tumour situated in a main bronchus or in one of its larger divisions can be inspected and a piece removed for histological examination. In cases in which ulceration has not yet occurred in one of the larger bronchi, the walls of the trachea or bronchus may be seen to be distorted, and in such cases positive evidence cannot be forthcoming by this method. A negative bronchoscopy, therefore, is not definite proof of the absence of the disease.

Thoracoscopy.—In cases in which, for any reason, pneumothorax has become established, some knowledge may be gained by the examination of the state of the visceral pleura through a thoracoscope. Nodules may occasionally be seen in this way, and material thus removed for section.

Exploration.—Finally, in doubtful cases it may be desirable to explore the chest and to define the exact nature of the disease. In this way further material may be secured for section. In other cases the diagnosis may be clinched by the removal of a superficial metastasis.

Difficulties of Diagnosis

The histological findings are the only criteria on which a definite diagnosis can be based. The common appearances are those of a columnar or squamous-celled carcinoma, or the tumour may be composed of rounded or oval cells which at first sight resemble a sarcoma, but which have their origin in the deeper layers of the bronchial mucous membrane. As far as we know, the clinical behaviour of the tumour and its response to radiotherapy is independent of the histological picture.

The chief difficulties of diagnosis result from the presence of inflammatory conditions such as tuberculosis, lung abscess and syphilis, bronchiectasis, tumours in the mediastinum (including sarcoma, lymphadenoma, and aneurysm), and certain diseases affecting the pleura—notably pleural effusion of any type, and primary tumours arising in connexion with the ribs and pleurae. Secondary deposits in the lungs from a primary growth outside the chest are usually multiple and readily distinguished radiologically, but occasionally there may be a single mass which closely resembles a primary lung tumour, and in any doubtful case careful search should always be made for a possible primary growth elsewhere in the body.

Differential diagnosis, therefore, may be a matter of great difficulty, but by the proper application of the methods of investigation already detailed a correct diagnosis can usually be reached.

Treatment

The results of treatment of cancer of the lung have improved comparatively little in the past few years. The main methods of attack are surgical and radiotherapeutic.

Removal of the affected lobe can only be successfully achieved in those cases in which diagnosis is made so early that the growth is confined to a single lobe and in which a sufficient length of bronchus is free from growth to enable a pedicle to be defined. The presence of metastases is, of course, an absolute contraindication to operation. The operation is a very severe one, and it can only be attempted in a small proportion of cases.

The late results of *x*-ray treatment are disappointing. The average duration of life in treated and untreated cases is less than one year, and it is only in exceptional cases that life appears to be prolonged to any extent by radiotherapy. On the other hand, relief of urgent and distressing symptoms may be dramatic, and for this reason alone we are encouraged to persevere in the hope that gradual improvement in the technique of treatment may lead to definite prolongation of life in a much higher proportion of cases. Radium may also be applied to the growth either through the chest wall or through a bronchoscope, but the results of this procedure are so far discouraging. It is unlikely that radiotherapy will ever be the treatment of choice, for the majority of cases first present themselves for examination in a comparatively late stage of the disease, when metastasis has already occurred. For these cases, as for similar growths arising in any other organ, a more general method of attack, either chemotherapeutic or otherwise, must be sought if our efforts to obtain satisfactory results are ever to prove successful.

THE MIDWIFERY COUNCIL'S REPORT

RECOMMENDATIONS FOR A SALARIED MIDWIVES SERVICE

In January, 1934, the National Birthday Trust Fund called a Joint Council of Midwifery in order to consider the means by which the services rendered by midwives could be improved throughout the country. It hoped thereby to strike an effective blow at the heavy and increasing rate of maternal mortality and morbidity. The chairman of the council was the Earl of Athlone, and the vice-chairmen Lord Aberdare and Sir Francis Fremantle. It contained representatives from many bodies representing local authorities, hospitals, and medical, nursing, and obstetrical organizations. As regards its medical constitution, the British College of Obstetricians and Gynaecologists was represented by Dr. T. Watts Eden, Dr. J. S. Fairbairn, and Mr. L. C. Rivett; the Association of County Medical Officers of Health by Dr. R. D. Smedley; the British Medical Association by Dame Louise McIlroy, Mr. E. W. G. Masterman, and Dr. W. H. F. Oxley; the Queen's Institute of District Nursing by Sir William Hale-White, Mrs. Bruce Richmond, and Miss M. Wilmshurst; and the Society of Medical Officers of Health by Dr. J. J. Buchan. The council later appointed a Midwifery Services Committee, under the chairmanship of Dr. Eden and vice-chairmanship of Sir Francis Fremantle and Dr. Fairbairn; this committee prepared the report, the recommendations of which are of far-reaching importance. The committee's terms of reference were:

> "That further consideration of the whole question of the remuneration of midwives, as bearing on the efficiency of the midwifery service, is urgently required, and that a detailed scheme should be prepared for the enlistment of midwives throughout the country in an organized service, suited to the needs of each district, and having due regard to the retention of the mother's freedom of choice of attendant."

In its report the committee first reviewed the figures for puerperal mortality and total maternal mortality, showing that they had risen alarmingly in the last ten years; the rate for neo-natal mortality had remained stationary, while there was a falling infant mortality rate. It pointed out that measures taken to reduce maternal mortality can be expected to bring about proportionate improvements in the neo-natal death rate and in maternal morbidity. It referred to a long list of recent reports, headed by the Memorandum of the British Medical Association issued in 1929, and deduced from their contents that of all the agencies concerned in rendering motherhood safer none was more important than the work of the midwife, for she attends about 60 per cent. of all confinements and is in a position to exercise powerful influence upon her patient to take advantage of all the agencies designed for her benefit. A well-trained, well-informed, and intelligent service of midwives, working in co-operation with the medical profession, is therefore of the first importance.

The previous reports express agreement upon the following points: that domiciliary midwifery should continue to form the basis of the maternity service; that the nursing of every maternity case in which a medical practitioner is engaged should be conducted by a qualified midwife; that the status and remuneration of midwives should be substantially improved and their training lengthened, improved, and standardized; that compulsory post-certificate courses are essential; and that the general supervision of midwives should be carried out by senior members of their own profession. The committee agrees that normal confinements can be satisfactorily conducted at home, and that the maternal mortality will not be reduced merely by increasing the hospital provision for normal cases. It considers that every maternity case should be nursed by a qualified midwife, and recommends that unqualified persons should be forbidden by law to attend women in childbirth for gain. The Memorandum of the B.M.A. concurs with this view, although—as the committee remarks with approval—it advocates the provision by the State of medical attention for the purposes of ante-natal and post-natal examination.

INADEQUATE REMUNERATION OF MIDWIVES

The remuneration of individual midwives, declares the report, is entirely inadequate, and compares most unfavourably even with that of nurses, who, as a class, are admittedly underpaid. The average salaries of village nurse-midwives, Queen's nurse-midwives, hospital nurses, and health visitors all considerably exceed the £80 which the committee has ascertained to represent the average yearly earnings of a midwife dependent upon her profession. In certain areas this figure may sink as low as £50, and out of this meagre sum the midwife is expected to provide equipment, necessary drugs, and disinfectants, and even in some cases dressings, for her patients. There is evidence that the low standard of comfort and cleanliness in the houses or lodgings occupied by midwives in certain areas militates against the maintenance of a high standard of professional work, particularly where ante-natal examinations have to be undertaken in unsuitable rooms normally utilized for other purposes, or where the sanitary arrangements are inadequate for the midwife's requirements. In the East End of London the fee is as low as 16s. for multiparae, and the great majority of patients pay no more than 30s.

The main causes of the low remuneration of midwives are, says the report:

(*a*) The economic position of those persons in the community who principally employ midwives, there being no sufficient fund or insurance to enable these persons to pay for an improved midwifery service.

(*b*) The part-time practice carried on by large numbers of midwives as an aid to another source of income. These midwives frequently engage in some other occupation, or they are mothers of families, and take cases occasionally merely to supplement the family income. Such midwives tend to cut fees below the average for the neighbourhood in which they live, and have only a secondary interest in their work. It is estimated that out of, say, 9,200 independent midwives, 3,680 (40 per cent.) take less than 15 cases a year.

(*c*) The excessive number of midwives qualified, arising from the shortness of the present period of training and the low educational standard required from entrants.

Reforms and extensions of training designed to raise the status and efficiency of the service of midwives to its proper level will, however, in the opinion of the committee, inevitably involve the candidate in additional expense which cannot be met by the present type of entrant. If such extensions were introduced before other reforms had made the profession attractive to a better class of candidate, the probable result would be a shortage of midwives within a few years.

ADVANTAGES OF AN ORGANIZED SERVICE

The committee considers three different methods of remedying the situation: (1) restricting the numbers of midwives in practice; (2) increasing the remuneration of midwives otherwise than by their whole-time employment by the State or local authority; and (3) by the establishment of a salaried midwives service under the control of the local supervising authority. The report discusses these three proposals in detail, and concludes in favour of the third.

The proposal is put forward that the institution of an organized service throughout the country would result in a great improvement in domiciliary midwifery. The improvements in the conditions of service necessary to attract a better class of candidate can only be brought about within an organized service. Of the further advantages which an organized service would yield the first is co-ordination. The full benefits of co-ordination between all the various parts of a maternity service can only be realized when the employment of the midwife is on the same basis as that of other members of the public services. Overlapping of the services of health visitor and midwife could be prevented, economies could be effected in the working of ante-natal clinics and allied centres, and many gaps in the existing arrangements could be filled up. As midwives employed by the local authority would be working in close relation with the health visitors, officers of clinics, and medical officers attached to the public hospitals, the patient would be continuously in the care of the same service. Moreover, the reserve staff necessary to replace the midwife in case of illness, contact with infection, and holidays would be provided on the most economical basis. There would also be scope for promotion, the lack of which is a principal reason why well-educated women refuse to practise as midwives; and an organized service would make it possible for district midwives to take periods of duty in hospitals and clinics. Pensions could be provided in order to enable midwives to retire at a suitable age, and would remedy the serious blot on the present system constituted by the continuance in practice of women over 70 and even 80, and women suffering from chronic ill-health. Midwives could be more highly trained in all aspects of their work, and the period of training required for the C.M.B. certificate could be raised to three years. There would be no further difficulty about the payment of the midwife's fee in necessitous cases.

THE PROPOSED SCHEME

The committee is therefore of opinion that there is no satisfactory alternative to the introduction of a municipal salaried whole-time midwives service in all areas not already adequately provided with salaried midwives. To this end it proposes to place upon every appropriate local authority the duty of arranging for an adequate domiciliary service of midwives, either employing enough whole-time midwives at suitable salaries or aiding the approved voluntary organizations that already employ salaried midwives. The willing co-operation of local authorities throughout the country is essential, and it is equally necessary that the general body of midwives should be satisfied with the proposed conditions of service. The personal relations between midwife and patient must be maintained, and economy must be observed, so far as is consistent with efficiency. The unit of administration in each area should be the local supervising authority as defined in the Midwives Acts.

As at present the responsibility for midwifery is divided between these authorities on the one hand and the maternity and child welfare authorities on the other, certain adjustments will have to be made, but the co-operation ought not to involve special difficulties. The proposed service should be introduced simultaneously over the country on a uniform basis. The cost should be met by the fees charged for the services of the municipal midwife, and these would be fixed by the authority after consultation with interested bodies. They could be paid in advance or by instalments, and remitted in necessitous cases. Any deficiency would represent, not the provision of a cheaper service to the patient, but the cost to the public of providing a better service at the present rate. Careful arrangements will be needed to avoid disturbing existent voluntary organizations, and the local supervising authority should consult with representatives of the hospitals, nursing associations, and similar bodies, and with the local Midwives' Association and the general practitioner. Grants might have to be made to voluntary bodies to enable them to extend their service to cover the allotted area, and to pay the same rates of salary and pensions as the authority.

To raise the status of midwives it is recommended that midwives entering the municipal service should receive adequate pay and allowances and pension rights, and be accorded the same status and remuneration in every respect as health visitors. The needs of the service should be calculated on the basis of an average of eighty cases per midwife per year in urban areas and proportionately less in scattered districts. The number likely to be required is about 4,000. The municipal service should in the first instance be recruited from midwives in practice within the area, to obviate possible friction. The vacancies in appointments to the service should in all cases be advertised by the authority. Practising midwives who are not accepted or are required to leave within two years for reasons other than misconduct should be entitled to compensation on a basis of three years' purchase. The probable number eligible for compensation would be in the neighbourhood of 3,300. Immediate provision should be made to pension midwives who are too old or feeble to practise satisfactorily. Supervision and inspection should be carried out by senior midwives in actual practice, possibly with a medical practitioner as chief inspector. Every midwife should be required to take a refresher course, including, if necessary, two months in a training institution, at intervals not exceeding seven years; the authority, in consultation with the Central Midwives Board, would provide the courses and the necessary allowances and locumtenents. An appeal should lie to the Minister of Health from decisions which affect an individual midwife personally, but do not apply to the general body. A certain number of successful midwives would no doubt prefer to remain in private practice. The scheme is not intended to eliminate all independent midwives, but chiefly to deal with the problem of the patient who cannot afford to pay an adequate fee. It is desired that the municipal or Nursing Association midwives should maintain the same close relationship with the public and voluntary hospitals and clinics in their neighbourhood as the district staff of the hospital itself.

The report contains appendices giving full details of the proposed organization and conditions of service, the

FIG. 1.—Photomicrograph showing endometrium from a woman complaining of sterility and of secondary amenorrhoea of seven months' duration. There is no atrophy. The appearances are those of the interval phase, with some hyperplasia. The underlying abnormality is therefore a prolongation of the oestrous phase of the ovarian cycle. (× 80.)

FIG. 2.—Photomicrograph showing endometrium removed from a patient complaining of sterility and having also had four months' amenorrhoea. The glands are in the secretory phase and present typical premenstrual appearances. The underlying abnormality is therefore a persistence of active lutein tissue in the ovary. (× 140.)

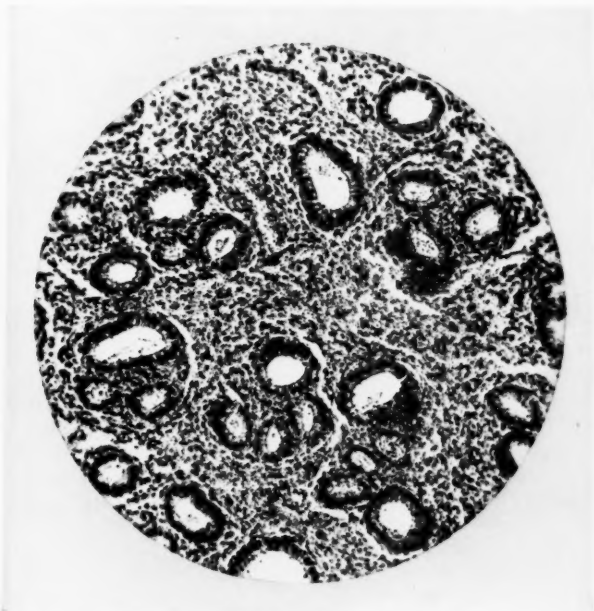


FIG. 3.—Anovular menstruation manifested by menorrhagia. This endometrium, which is in the interval phase and shows no evidence of having been subjected to corpus luteum influence, was removed on the 23rd day of a 28-day cycle. The menstrual loss was excessive, and persisted for eight days. (× 80.)

FIG. 4.—Anovular menstruation. This endometrium was removed on the 24th day of a normal 28-day cycle: it presents the typical features of the interval phase and shows no evidence of having been under the influence of the corpus luteum hormone. One of the glands is larger than normal. (× 80.)

FIG. 1.—Bronchiectasis affecting both lobes of the left lung.

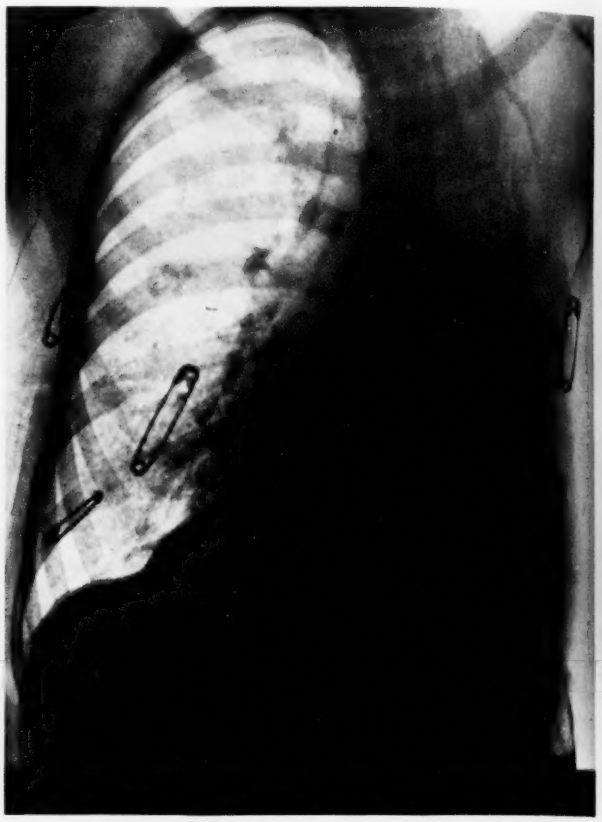


FIG. 2.—From the same patient as Fig. 1. Total left thoracoplasty.

FIG. 3.—Multiple bronchiectatic cavities of the right upper lobe.

FIG. 4.—Saccular bronchiectasis of left lower lobe. The appearances on the right side are due to alveolar filling.

JAMES GRANT AND JOHN H. MILLER: ATHEROMA OF CORONARY ARTERY AND MYOCARDIAL FIBROSIS

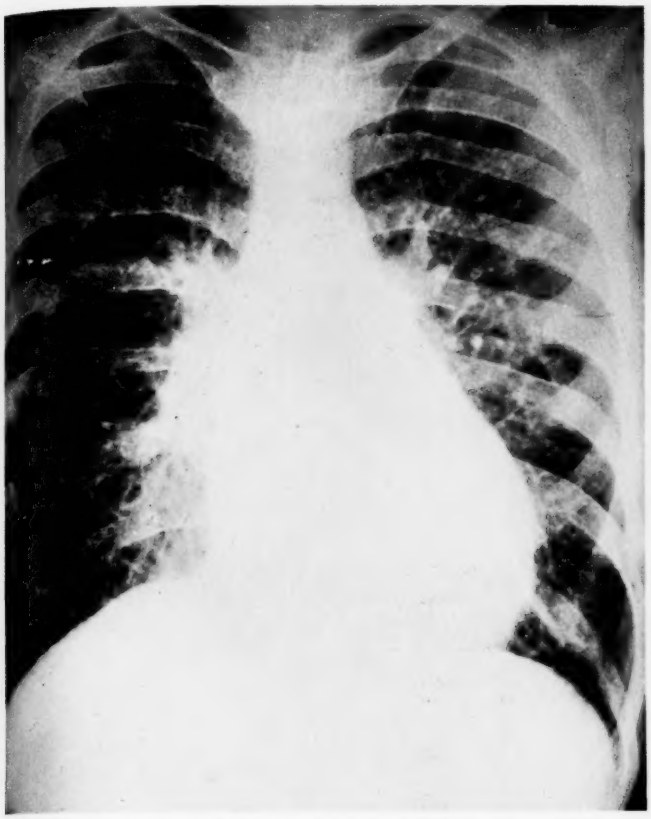


FIG. 1.—(G. L., 4/4/34.) The enlarged heart shadow and increased density of the left mid-zone is evident.

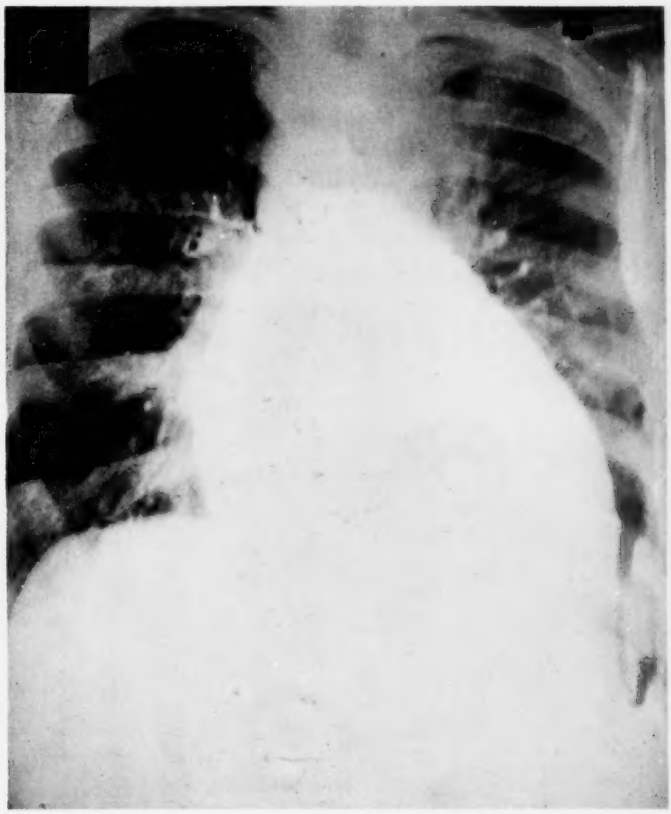


FIG. 2.—(G. L., 29/8/34.) The heart enlargement is now colossal and nearly obliterates the lower half of the left lung.

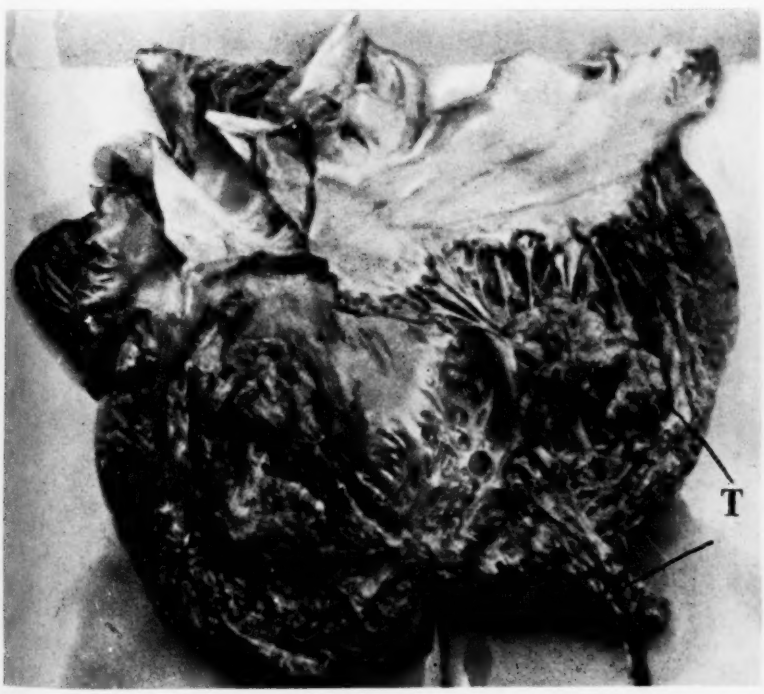
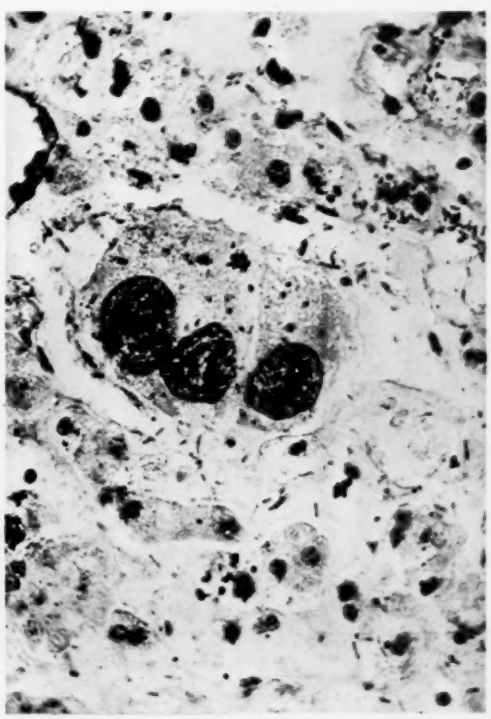


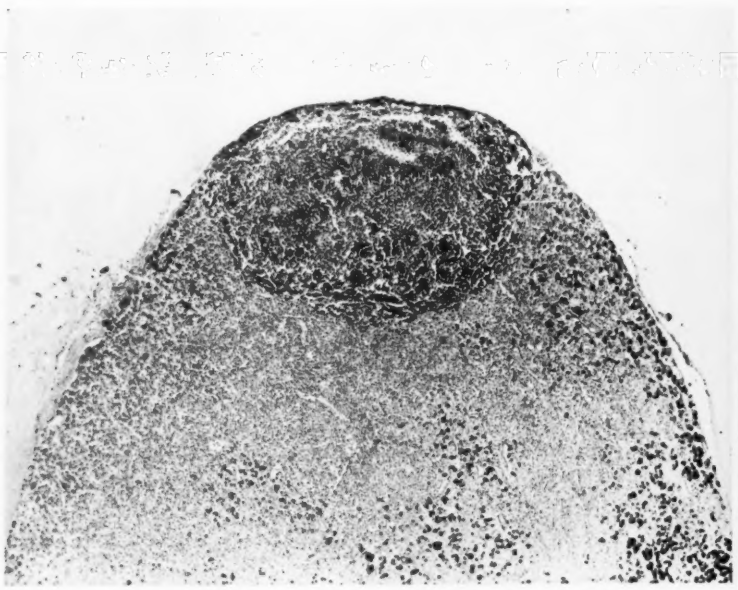
FIG. 3.—(G. L., 7/9/34.) Interior of left ventricle, showing extensive thrombus (T) adhering to the thinned wall.

ALEXANDER LYALL: CARCINOMA OF SUPRARENAL CORTEX ASSOCIATED WITH HYPERTENSION



Suprarenal tumour showing typical giant cell. (× 200.)

H. G. CLOSE: BASOPHIL ADENOMA OF THE PITUITARY GLAND WITH RENAL CHANGES



Basophil adenoma at lateral border of anterior lobe of pituitary. Aniline blue only. (× 22.)

A. McNAIR AITKEN: ACUTE IODINE BURN

Acute iodine burn.

SIDNEY DEANER: CHRONIC DISSEMINATED PULMONARY TUBERCULOSIS WITH ERYTHEMA NODOSUM

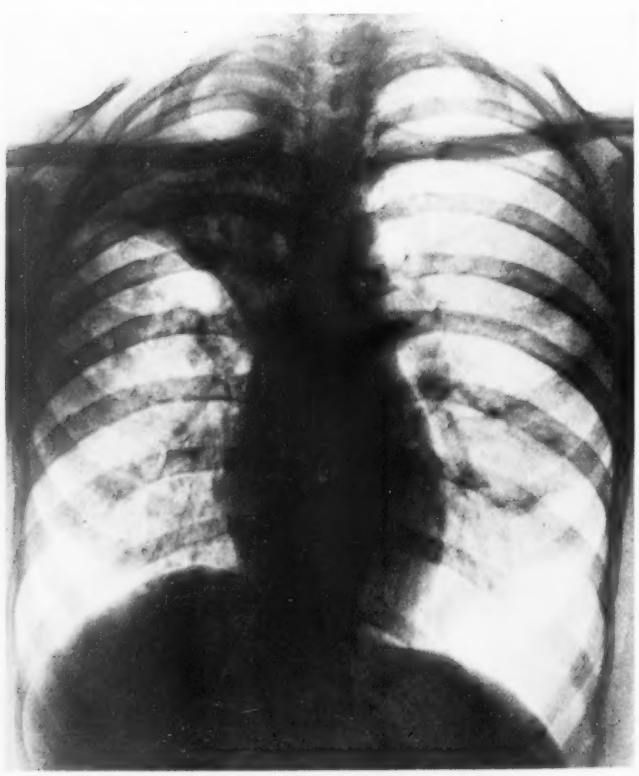


FIG. 1.—Case "R. A." The radiogram is typical of "tertiary" pulmonary tuberculosis: there is dense shadowing in the right upper lobe with a large cavity at the apex, with drawing up of the thickened interlobar fissure. There is also infiltration in the lower lobe.

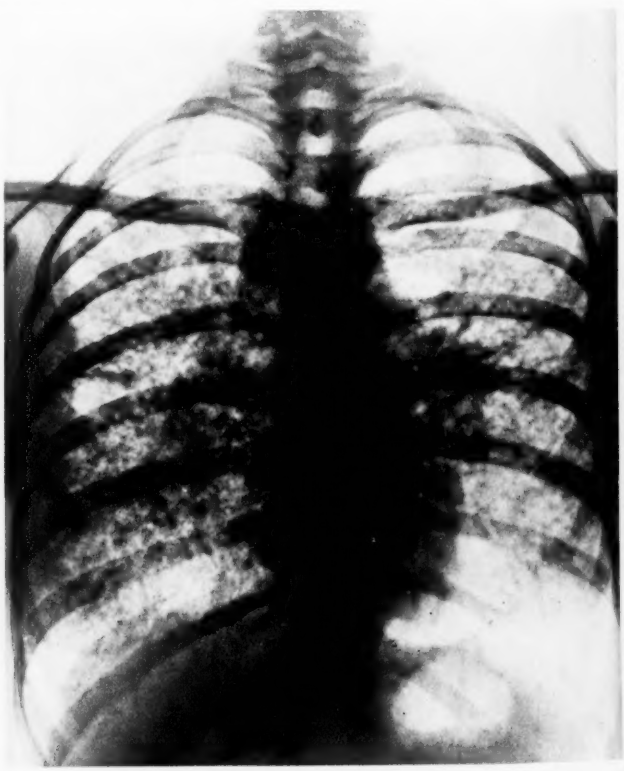


FIG. 2.—Case "E. A." This is typical of the "secondary" stage. There is generalized mottling in both lungs, rather coarser on the right side. The root shadows are massive.

estimated numbers of midwives required, and the post-certificate courses.

SUMMARY OF RECOMMENDATIONS

The committee summarizes its recommendations as follows:

1. That this committee concurs with the views expressed in the reports that, although adequate hospital accommodation for ante-natal cases and abnormal confinements is essential, normal confinements can be satisfactorily, safely, and preferably conducted in the patient's own home, except where this is unsuitable.

2. That the nursing of every maternity case should be conducted by a qualified midwife, and unqualified persons should not be permitted to nurse maternity cases for gain. It should be the duty of the local authority to provide that midwives are available to act as maternity nurses in the case of any patient who has engaged a doctor for her confinement, but is unable, in addition, to afford the services of a trained nursing attendant.

3. That a salaried midwives service should be established under the appropriate local authority in all areas not already served by salaried midwives. It is not intended to interfere with the continuance in practice of independent midwives.

4. That it should be the duty of every appropriate local authority to provide, or secure the provision of, an adequate domiciliary service of midwives in its area, and for this purpose: (*a*) to employ the requisite number of whole-time midwives at adequate salaries; and/or (*b*) to aid approved voluntary organizations (including provident societies) that employ salaried midwives for service in its area.

5. That the local supervising authority (Midwives Acts) should be the unit of administration for the proposed service.

6. That the cost of the service should so far as practicable be met by the fees charged by, and payable to, the authority or the voluntary organization for the services of the midwife.

7. That before initiating a scheme for its area the local supervising authority should consult with representatives of the hospitals, nursing associations, and other voluntary organizations which are concerned in maintaining a salaried service of midwives, of the local Midwives' Association, and of the general practitioners of the area with the following objects: (*a*) to provide effectively for the needs of the area; (*b*) to avoid duplication of services in any part of the area; (*c*) to ensure substantial equality in rates of pay and conditions of service among the salaried midwives in the area; (*d*) to settle the fees to be charged for the services of municipal midwives, whether acting as midwives or maternity nurses.

8. That midwives entering the municipal service should receive adequate pay and allowances and pension rights, and be accorded the same status in every respect as health visitors.

9. That the average number of cases that the midwife would be expected to attend should not exceed eighty per annum in view of the increased work falling upon midwives as a result of recent developments of midwifery practice.

10. That first appointments to the midwives service should be advertised by the local supervising authority, and such posts should be filled as far as possible from candidates who are practising within the area. In future, recruits to the service should be drawn from practising midwives or from midwives who have had recent experience in the labour wards or district of a recognized maternity hospital.

11. That midwives practising within the area of a local supervising authority who apply to enter the salaried service of that authority within twelve months of its institution and who are not accepted, or who after entering are required to leave within two years for reasons other than misconduct, and who undertake not to practise further within the area of that authority, should be entitled to compensation, the rate of which should be based upon three years' purchase of the net value of their practice calculated over a period of five years.

12. That after the new Act has come into operation the local supervising authority should require midwives in independent practice within the area, who from their age or physical or mental infirmity are unable to carry out satisfactorily midwifery practice, to retire upon receiving an adequate pension, having regard to all the circumstances of the case.

13. That the general supervision and inspection of midwives should be carried out by midwives experienced in actual practice acting under the direction of the medical officer of health.

14. That every midwife should be required to take a refresher course, including, if necessary, a two months' residence in a training institution, at regular intervals not exceeding seven years. In order to make this possible it should be the duty of the local supervising authority, in consultation with the Central Midwives Board, to make provision for such refresher courses. It should further be the duty of the local authority to provide the allowances necessary for any midwife practising within the area to take such courses (including the provision of a locumtenent).

15. That a midwife should have the right of appeal to the Minister of Health against decisions of the local supervising authority which affect her personally, but do not apply to the general body of midwives in the area, with the exception of matters subject to the jurisdiction of the Central Midwives Board.

16. That each woman who applies for the services of a municipal midwife should be allowed to select the midwife she prefers, in so far as circumstances permit.

Nova et Vetera

PRODIGIOUS INFANTS

BY W. F. CHRISTIE, M.D.

The interesting case of infantile obesity reported in the *Journal* on February 9th by Dr. D. W. Boswell prompts me to send some details of similarly afflicted babies which have appeared from time to time in the literature.

Infants heavier at birth than 10 lb. are very uncommon. Most of these heavyweights are post-mature babies, being precociously large rather than obese. Many are stillborn, and their delivery often proves fatal to the mother who bears them. The following is a typical case.

Watts Eden's Case.—The foetus weighed 14½ lb., and died during delivery, pregnancy having continued three weeks beyond the calculated date.

Occasionally both mother and child survive the ordeal, as in the following case, the mother being a schoolmistress at Crewe and the child the third in her family.

Eddowe's Case.—It weighed 20 lb., was well developed and quite healthy. Dr. Eddowe stated with obvious pride that the delivery of the child was quite spontaneous, without any laceration of the maternal parts.

The term "congenital obesity" refers only to those who are born fat.

Wulf's Case.—It was well proportioned, and looked like a child 3 months old, except that it had an enormous development of fatty tissue. It died at birth, weighing 18½ lb.

The less large the child at birth the greater its chance of survival. It then fattens steadily throughout the succeeding years.

Percy and Laurent's Case.—The child weighed 13 lb. at birth, 3 st. at 6 months (normal 16 lb.), and 32 st. at 20 years.

Cameron's Case.—Stella L., weighed 14 lb. at birth, and 7 st. at 17 months (normal 21½ lb.). She was not weaned until she was 2 years old, at which time she commenced to walk. She was perfectly healthy at the age of 3, when the case was reported, and was still increasing in size.

The Case of Mr. William Campbell.—This man was the landlord of the "Duke of Wellington," Newcastle-on-Tyne, in 1878. From birth he was remarkably stout, at 9 months he weighed 4 st., at 10 years he weighed 18 st., at 22 years he weighed 52 st. The reporter stated that he was both intelligent and agreeable, had an appetite not more than average, and was moderate in the use of alcoholic drinks.

One might think from the fact that obesity is already established on these babes' arrival into the outside world that congenital obesity owes none of its fat to dietetic error. Such a view is not necessarily correct, as is borne out by the following case.

Heubner's Case.—The child weighed 16½ lb. at birth, and 40 lb. at 8 months (normal 17¾ lb.), but the obesity disappeared shortly after the child was weaned. The maternal

milk was found to contain an unusually large percentage of fat, the daily intake having a calorie value of 900 (normal 700).

When a normally developed baby like Dr. Boswell's 7 lb. infant adds quickly to its weight after birth, one must suspect either dietetic fault or a defect in the fat-storage mechanism. The dietetic error may lie in the quantity of the milk drunk or in its quality. Some mothers have enough breast secretion to feed two or three children, or the calorie value may be unusually high, as in these two examples.

Mark Reuben's Case.—Baby Z weighed 34 lb. when 10 months old (normal 19 lb.), and this was due to the mother's milk containing 6 to 7 per cent. of fat (normal 3.5 per cent.).

G. A. Sutherland's Case.—Here the baby weighed 28 lb. at 7 months (normal 16 lb.), analysis of the mother's milk showing an 8.2 per cent. content of lactose (normal 6.5 per cent.). The excess of adipose tissue disappeared shortly after the child was weaned.

Fat children who become slender after weaning have generally been the victims of one or other of these tricks of Nature. It must not be thought, therefore, that all cases of considerable obesity in infancy are due to "glands." Where over-fatness is not obviously lacteal in origin, a flaw in the fat-storage mechanism can be suspected. It may or may not be endocrine.

So far as I am aware, modern laboratory investigations on these infants have not as yet been possible. Dyspituitarism arising soon after birth must be an exceedingly rare condition. Further, when children reach an age—usually between 5 and 6 years—at which they will permit laboratory investigation, most of the so-called Fröhlich syndromes show a perfectly normal *x*-ray, basal metabolic rate, blood sugar tolerance, and other tests.

It is hoped that Dr. Boswell will publish a second report when he has made his laboratory tests and reached conclusions regarding the causative factors in his remarkable case.

COMMITTEE ON PHYSICAL EDUCATION

The committee appointed by the Council of the British Medical Association on January 23rd, 1935, to consider and report upon the necessity for the cultivation of the physical development of the civilian population and the methods to be pursued for this object, has now been constituted as follows:

Dr. S. Watson Smith, F.R.C.P.Ed. (President of B.M.A.)
Dr. E. Kaye Le Fleming (Chairman of Council, B.M.A.)
Mr. H. S. Souttar, C.B.E., M.Ch., F.R.C.S. (Chairman of Representative Body, B.M.A.)
Mr. N. Bishop Harman, LL.D., F.R.C.S. (Treasurer, B.M.A.)
Sir Henry Brackenbury, M.D., LL.D. (Member of Council, B.M.A.)
Sir Crisp English, K.C.M.G., F.R.C.S. (Member of Council, B.M.A.)
Mr. W. McAdam Eccles, M.S., F.R.C.S. (Member of Council, B.M.A.)
Dr. W. N. West-Watson (Member of Council, B.M.A.)
Mr. E. T. England, M.A. (Representative of Incorporated Association of Head Masters)
Miss Madeline Dorothy Brock, O.B.E., M.A., Litt.D. (Representative of Association of Head Mistresses)
Miss P. Spafford (Representative of National Playing Fields Association)
A representative of Medical Officers of Schools Association
Dr. Henry Herd (Representative of Society of Medical Officers of Health)
Dr. Adolphe Abrahams, O.B.E., F.R.C.P. (Consulting Medical Adviser to the British Olympic Athletic Team)
Dr. G. P. Crowden, M.Sc. (Reader in Industrial Physiology, University of London)
Lieut.-Colonel A. C. Hare Duke, C.M.G., D.S.O. (Balliol College, Oxford)
Miss Maud Forrester-Brown, M.D., M.S. (Orthopaedic Surgeon)
Mr H. E. Naylor (Member of Council of British Association for Physical Training)
The Rev. R. R. Hyde, M.V.O. (Director of Industrial Welfare Society)
Sir Arnold Wilson, K.C.I.E., C.M.G., D.S.O., M.P.

The following have been appointed to assist the committee in its deliberations:

Surgeon Captain H. E. R. Stephens, O.B.E. (Representative of the Royal Navy)
Major-General P. H. Henderson, C.B., D.S.O. (Representative of the Army)
Squadron Leader H. G. W. Lock, D.F.C., A.F.C. (Representative of the Royal Air Force)
Dr. J. Alison Glover, O.B.E. (Representative of the Ministry of Health and Board of Education)

The committee has also been given power to co-opt to its membership other persons whose services are likely to be of value.

INTERNATIONAL CONGRESS OF SURGERY, CAIRO, 1935-6

The tenth congress of the International Society of Surgery will be held in Cairo from December 30th, 1935, to January 4th, 1936, under the presidency of Professor A. von Eiselsberg of Vienna. The dates, already announced in the medical press, have been slightly altered in order not to interfere with the private celebration of Christmas.

The names of those opening the scientific discussions are as follows:

1. *The Surgery of the Parathyroids:* M. Brauer (Breslau), Dr. Churchill (Boston), MM. Braine and Chiloliau (Paris), M. Donati (Milan).
2. *The Surgery of the Lumbar Sympathetic:* M. Braeucker (Hamburg), by invitation of the Congress; Professor Archibald Young (Glasgow), M. Gonzales Aguilar (Santander), MM. Leriche and Fontaine (Strasbourg), MM. Chiasserini (Rome) and Pieri (Belluno).
3. *The Surgery of the Colon (Cancer Excepted):* M. Schmieden (Frankfurt), Professor Grey Turner (London), M. Corachan (Barcelona), M. Soupaults (Paris), M. Schoemaker (The Hague).
4. *Surgical Complications of Bilharziasis:* M. Naguib Makar (Cairo), S.E. Aly Ibrahim Pacha (Cairo).

The general arrangements for the work of the Congress, together with its numerous social activities, are set out in the following provisional programme:

Monday, December 30th, 1935 (in Alexandria): 5 p.m., Reception by the Municipality.

Tuesday, December 31st (in Cairo): 8.30 a.m., Inaugural ceremony at the University; 9 a.m. to 1 p.m., First scientific session; 3 p.m., Visit to Pyramids and tea; 9 p.m., Dinner at Heliopolis, by invitation of the Ministry of Public Instruction.

Wednesday, January 1st, 1936.—8 a.m. to 1 p.m., Visits to the hospitals; 1.30 p.m., An excursion on the Nile.

Thursday, January 2nd.—8 a.m. to 12 noon, Second scientific session; 1.30 p.m., Meeting of International Committee of Congress; 2 p.m., The General Assembly of the Congress; 3 p.m., Visit to the Museums; 9 p.m., Reception by the President of the Council.

Friday, January 3rd.—8 a.m. to 12 noon, Third scientific session; in the evening, Reception by the President of the Congress (Professor von Eiselsberg).

Saturday, January 4th.—8 a.m. to 12 noon, Further visits to the hospitals, with exhibition of cases, etc.; 1 p.m. to 5 p.m., Fourth scientific session; 9 p.m., The closing banquet, at the invitation of the Egyptian surgeons.

It is also probable that there will be a reception at the Royal Palace.

There are a great many British medical men holding chairs and teaching posts in the University of Cairo, and very many of the Egyptian surgeons have obtained some part of their medical education in this country, and nearly all are Fellows or Members of the Royal Colleges. Almost all members of the profession speak English. The surgeons look largely to England for their inspiration, and are most anxious to do everything in their power to make the congress a success.

The travel arrangements are in the hands of Messrs. Thos. Cook and Sons (head office, Berkeley Street, London, W.1), who are prepared to issue itineraries and to give all information as to travel arrangements.

Dr. L. Mayer, of 72, Rue de la Loi, Brussels, is secretary-general, and Professor Grey Turner (British Post-Graduate Medical School, Ducane Road, Hammersmith, London, W.12) is the British delegate.

Scotland

Glasgow Royal Infirmary

At the annual meeting of contributors to Glasgow Royal Infirmary on February 11th, Lord Provost A. B. Swan, who presided, said the report showed that the Royal Infirmary was increasing in strength and usefulness as the years passed. During the last few years the work had been carried on at very high pressure ; there had been periods when there were 900 patients in the institution, a matter which was not quite satisfactory from the point of view of the management or the nursing staff. The managers were now making provision through the new Canniesburn annexe scheme to relieve the strain on the accommodation. Recently, too, the work of the out-patient department had been carried on under difficulties, and the managers had now bought the neighbouring buildings, which belonged to the Institution for the Blind and occupied one and a half acres, for use as an out-patient department. Sir James Macfarlane, chairman of the Board of Managers, said that two methods had been suggested for the relief of overcrowding in the wards and the long waiting list. One was the erection of the auxiliary convalescent home, and the other was the establishment of an auxiliary hospital for the treatment of paying patients of moderate means, which would relieve the wards of many cases at present treated there. He was glad to say that they were now in a position to proceed with both schemes, for during the past year they had received from a private trust a sufficient sum to meet the cost of building and equipping the auxiliary home. No appeal had yet been made for funds for the scheme for paying patients, but unsolicited contributions from generous friends of the Infirmary had been received from time to time since 1925, when the scheme was first suggested, and they were now able to meet the cost of erecting and equipping this addition to the hospital. The convalescent home would comprise large and small wards containing eighty beds, while the block for paying patients would accommodate forty ; an administrative block would serve for both these institutions.

Glasgow Royal Maternity and Women's Hospital

During 1933 there were 4,595 patients admitted to the Glasgow Royal Maternity and Women's Hospital, the largest purely maternity hospital in the country. It has 175 beds, and the average daily number of resident patients was 163. The eighth annual medical report of this institution has been compiled by the registrar, Dr. McK. Hart, the data being arranged, so far as possible, in accordance with the standard scheme of the Royal Society of Medicine. There are three permanent units, each with its chief, visiting, and assistant visiting surgeons. Of the 175 beds seventy-eight are reserved for ante-natal cases, a like number for lying-in cases, and nineteen for suspect cases. The beds for suspect cases are in a separate block in charge of one of the assistant surgeons, who holds the post for a month at a time, during which period he has no dealings with any patients in any other part of the hospital. Cases of " failed forceps," and others which have had manipulation before admission, are sent direct to the isolation block. By arrangement with the medical officer of health, septic cases are transferred to the city fever hospitals. Co-operation with the city of Glasgow has enabled the hospital to continue its policy of not refusing treatment to any woman in labour ; in the year under review the municipal hospitals accepted 850 patients as overflow cases. From the ante-natal dispensary, which is on the premises, many patients are admitted to the obstetrical department and to the ante-natal wards. In 1933, 1,553 patients were treated in these wards, representing 33.7 per cent. of all admissions to the hospital. With this dispensary is associated a post-natal dispensary and an infant consultation (child welfare) centre. The number of abnormal cases in the year under review was 2,976, or 64.7 per cent. of all admissions, many of these patients being in an emergency state. This fact, together with the high incidence of rickets in the population served by the hospital, indicates that the type of emergency case treated is often very grave. Of the seventy maternal deaths in the year twenty-eight (40 per cent.) occurred within twenty-four hours of admission, and another 20 per cent. within the next six days. Puerperal sepsis was noted in fourteen (20 per cent.) of the seventy cases, and puerperal pyrexia in thirteen (18 per cent.). The death rate for the whole hospital was 1.5 per cent. Of the 4,595 patients treated in the wards, 1,910 (41.5 per cent.) had been under supervision in the ante-natal clinic. The bulk of this report is made up of clinical details of the patients, with comments. During 1933 there were 497 cases of toxaemia of pregnancy, classified as follows: albuminuria, pre-eclamptic toxaemia, and nephritic toxaemia, 331 ; eclampsia, seventy-eight ; and hyperemesis, including late persistent vomiting, eighty-eight. There were twenty-five maternal deaths in these toxaemia cases. Of 256 cases of ante-partum haemorrhage admitted during the year 117 were of placenta praevia and 139 of accidental haemorrhage. Admitted contracted pelvis cases numbered 628 ; of these patients 459 had had supervision in the hospital clinic.

Crichton Royal Institution

The report of the Crichton Royal Institution, Dumfries, for 1934, by Dr. C. C. Easterbrook, physician-superintendent, shows that the number of patients under treatment during the year was 1,250, of whom 574 were males and 676 females, with an average daily number of 982. There were 426 patients in all under voluntary treatment, and of these none required certification. The number of private patients, including both certified and voluntary cases, was just over 640. With regard to the cause of the mental illness, some form of stress was found in most of the cases, in addition to the predisposing factor of a nervous constitution. Thus biological stresses, comprising critical periods of life in both sexes, were traceable in 61 per cent. of cases ; psychic stresses, such as worry, anxiety, grief, or want of occupation, in 36 per cent. ; toxic stresses in the form of alcoholic excess, in 10 per cent. ; overwork, with insufficient rest or sleep, in 9 per cent. ; and energic stress, such as physical shock, in 4 per cent. As to the type of mental illness prevalent, the constitutional psychoses formed the chief group, accounting for 88.3 per cent. of cases ; the psychoneuroses accounted for 4.5 per cent. ; the organic psychoses, such as encephalitis lethargica and general paresis, for 4 per cent. ; and congenital amentias, for 3.2 per cent. The number of discharges in 1934 was 187, of whom 116 were voluntary and seventy-one certified patients. Of the voluntary patients sixty-three left recovered, forty-nine improved, and four unimproved, the recovery rate being 42.5 per cent., while 33.1 per cent. were distinctly improved. Of the certified cases, fifty-four were recovered, fifteen improved, and two unimproved, the recovery rate being 47.7 per cent. of the number admitted, with an additional 13.3 per cent. improved. The recovery rate of all admissions was 44.8 per cent., and the mean age on recovery was 48 years. The forms of mental illness from which recovery chiefly took place were: melancholia, mania, alcoholic psychoses, and delusional and confusional states. The total duration of the mental illness in those who recovered was less than six months in 30 per cent., six months to two years in 33 per cent., and

over two years in 37 per cent. The number of deaths was eighty-three in 1934, of whom sixty-one were certified and twenty-two voluntary patients. With regard to treatment, the routine work of the laboratory was found of great help. Much research was carried out—for example, an examination of the white corpuscles of the blood in epilepsy, in which a series of 150 examinations in nineteen patients found a remarkable fluctuation in the number of these cells from day to day. The institution made increased arrangements for the classification and separation of different types and grades of mental illness, and now has in all forty-five separate wards and houses for the care and treatment of the patients. The erection of Easterbrook Hall was begun to supplement the existing provisions for physiotherapy and psychotherapy, and this new building will occupy a central position in the institution, with a large amusement hall, library, supper room, arts and crafts saloon, and departments for electrical treatment, dentistry, etc.

Pharmaceutical Codex

A meeting of the Pharmaceutical Society of Great Britain was held in Edinburgh on February 15th in conjunction with the Edinburgh and Leith Division of the British Medical Association to discuss the *British Pharmaceutical Codex* of 1934. The discussion was opened by Mr. Harry Berry, vice-dean of the College of the Pharmaceutical Society, who explained that the *Codex* was intended to assist both physicians and pharmacists by dealing with all medicines in use, including those which were no longer official in the *Pharmacopoeia*, and certain others which were in general use but which had not yet reached the stage for inclusion in the official volume. The *Codex* furnished a reasonable standard for the purity of drugs not yet standardized by the *British Pharmacopoeia*. Dr. John Orr, dean of the School of Medicine of the Royal Colleges, Edinburgh, said that the *Codex* was of great value to medical practitioners, since it contained many drugs which had been held in repute in the past but which were not now included in the *British Pharmacopoeia*.

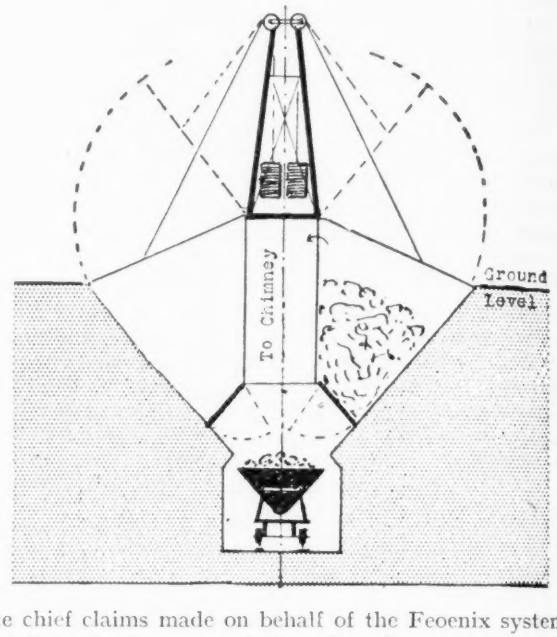
England and Wales

Incineration of Refuse

On February 16th a small party of medical officers of health and others interested in sanitary problems visited Sheepcote Valley, on the South Downs, where a method of refuse conversion by incineration is being used by the Brighton Borough Council. The Feoenix system is the invention of Mr. Frank Evans, who for thirty years has made a hobby of studying the disposal of refuse in its economic and hygienic aspects. The method, in brief, is as follows:

Two parallel trenches are dug in the ground, 12 feet deep by 9 feet wide, and are linked up by a tunnel running from end to end. Step-grates fitted with dampers intervene between trenches and tunnel. On arrival of a load of refuse the balance-covers over a section of the trench are raised and the contents of the lorry are side-tipped direct into the trench without handling. In the trench the refuse falls on to the grate, and can be lit easily from below by entering the tunnel. The trench-covers are then shut down. Incineration takes from twelve to forty-eight hours; the time could be reduced by forced draught. The grates are then swung open and the incinerated material falls into a truck running on rails in the tunnel. This is hauled to the surface and the residuals are taken away.

The fire in the experimental plant at Sheepcote Valley was started two years ago, and has never been out. Thirty tons of refuse have been disposed of each week with the plant working at half its capacity. The Brighton Corporation has now decided to increase the plant by 150 per cent. There is no unpleasant smell from the refuse while incineration is in progress, and although burning goes on day and night little attention is needed. The cost of installation and of maintenance is very low; moreover, the apparatus occupies relatively little space.



The chief claims made on behalf of the Feoenix system—that it is simple, economical, and sanitary—appear to be established. The advantages and the sphere of usefulness of the process were discussed at a luncheon party in the King's Hotel, presided over by Mr. Evans. Among those taking part were Dr. Charles Porter (M.O.H., Marylebone), Dr. James Fenton (M.O.H., Kensington), Sir Alan Powell (vice-chairman, Kensington Health Committee), Mr. G. S. Elliston, M.P., Dr. Duncan Forbes (M.O.H., Brighton), Dr. George Harnett, and Sir Cooper Rawson, M.P.

Society of Radiographers

The fourteenth annual dinner of the Society of Radiographers was held at the Restaurant Frascati, London, on February 16th, when about 160 members and guests sat down under the chairmanship of Dr. L. A. Rowden of Leeds. In responding to the toast of "The Society," which was proposed by Mr. George Shearer, president of the British Institute of Radiology, Dr. Rowden said that the society now numbered 850 members, and had strong branches in many parts of the country. There was an increasing demand for men and women who were competent in the practice of radiography, and he believed that their work was constantly becoming of more value in medicine and surgery. One of the features of the year had been the establishment of a journal for the society under the name of *Radiography*, the honorary editorship of which had been undertaken by Dr. G. W. C. Kaye of the National Physical Laboratory. Every year the society awards an Archibald Reid medal (named after its first president) and a money prize for the best thesis on a radiographic subject, and this was handed for the present year to Mr. William Watson of London, with a special certificate of merit to Miss M. S. Milln of Glasgow. Dr. Rowden also announced that on relinquishing the presidency, which he has held for two years, he was presenting to the society a presidential badge, which would be worn first by his successor, Miss K. C. Clark. Dr. J. Duncan White welcomed each of the guests, who included Dr. Cecil Wall, Mr. R. C. Elmslie,

Dr. G. W. C. Kaye, Mr. C. E. Bedwell of King's College Hospital, and the three who responded to the toast. The first of these was Dr. G. C. Anderson, Medical Secretary of the British Medical Association, who said that two years ago he had spoken optimistically of the formation of a national register of medical auxiliary services, in which radiographers would be included, and the establishment of which, together with the co-operation of the Association in the project, had been approved by the Representative Body. The register had not yet been formed, partly owing to inevitable delay in getting the memorandum and articles of association through the interested bodies, but more significantly owing to the introduction into the House of Lords of a Bill to register osteopaths. Until this Bill was got out of the way it was of little use proceeding with the national register, which would be rendered of no avail should the Bill go through. There was a clause in the Bill preventing anyone except those included in its provisions from practising manipulative treatment. He illustrated by a few apposite quotations from writings of osteopaths the absurd and pretentious claims made on behalf of osteopathy, the theory of which disputed the basis of the whole of modern medical and surgical practice. It was an elementary principle in medicine that before any treatment was instituted the condition must be investigated and diagnosed. As soon as this Bill was defeated the work on the national register would go forward, and he hoped that the register might be in existence by July. Other brief responses were made by Dr. J. Struthers Fulton of the Western Infirmary, Glasgow, who brought greetings from a considerable body of members north of the Tweed, and by Dr. A. Durward of University College, who spoke of the value of radiography to the anatomist in correcting the misleading conceptions that arose from a study only of the dead body. The company paid a warm tribute to Mr. F. J. Melville, honorary secretary and treasurer of the society, to whom its continued progress and efficiency is largely due.

Hunterian Society Dinner

The annual dinner of the Hunterian Society, commemorating the 207th anniversary of the birth of John Hunter, was held at the May Fair Hotel on February 14th, with the president, Dr. W. H. F. Oxley, in the chair. After "The Memory of John Hunter" had been toasted in silence Mr. W. E. Tanner proposed the health of the Lord Mayor and Corporation of the City of London, and expressed the society's thanks for the hospitality of the Mansion House on the occasion of the annual oration. The Lord Mayor (Sir Stephen Killik), in his reply, spoke of the close ties that had long existed between the corporation and the medical profession, and praised the admirable sanitary work of the Port of London. Lord Halsbury, proposing the toast of the "Hunterian Society," recalled how John Hunter made up for deficiencies in his early education by the exercise of the intuitive gifts of a man of genius. In a reference to the Osteopaths Registration Bill now before Parliament, Lord Halsbury said that while osteopaths often did good—and with the help of the medical profession they might do a great deal more—their work needed supervision by experts, and in this Bill they were certainly asking for too much. The President, in reply to the toast, welcomed two of his fellow students at Bart's, Lord Horder and Sir Walter Langdon Brown, who were sitting on his right and left. The members of the society, he said, now numbering 400, tried to follow in the Hunterian tradition. John Hunter was one of the fathers of rational medicine, insisting always that deductions must be built on facts. Speaking of the rise and fall of cults within and without the medical profession, Dr. Oxley noted the tendency of those who sympathized with irregular practice to erect a bogy—that of a hide-bound profession which would never accept anything from outside. The truth was that if anyone, anywhere, or in any way could find anything that would be of advantage in the treatment of disease the medical profession had always brought that something within its fold. Mystery was an essential part of these cults. His advice to the Select Committee of the House of Lords would be to test everything and hold fast to that which was true. The "Health of the Guests and Kindred Societies" was proposed in graceful terms by Dr. Percy Spurgin, and Mr. Howard Stratford, president of the West London Medico-Chirurgical Society, and Mr. Douglas Woodruff replied.

Study Leave for L.C.C. Medical Staff

Under the regulations of the London County Council special leave of absence for the purpose of taking university courses of study, research, or investigation is granted to assistant medical officers under certain conditions. It was intended that this regulation should apply only to staff at hospitals and institutions, but it is considered equally important that medical officers in the public health department other than those in the hospitals service—for example, officers in the school medical service—should have opportunities of keeping abreast with modern medical developments and preparing for higher examinations. The Hospitals and Medical Services Committee proposes, therefore, to bring all the whole-time medical staff in the public health department within the scope of the regulation.

H. O. Thomas and Robert Jones

At a meeting of the Liverpool Medical Institution on February 7th, Mr. T. P. McMurray read a paper on the life of Hugh Owen Thomas and of his ancestors in Anglesey. He described the origin of the Thomas family from one of the two boys who were washed ashore on the coast of Anglesey from a Spanish boat which had foundered during a storm in the Irish Sea. He traced the family down through the generations of bone-setters to Evan Thomas, the famous bone-setter in Liverpool. Hugh Owen Thomas was his eldest son, and practised first of all at 24, Hardy Street, and later at 11, Nelson Street. He was never connected with any hospital in Liverpool, and formed the principles on which the present treatment of bone and joint diseases is based. In concluding his address, Mr. McMurray made the following statement:

"The fame of Hugh Owen Thomas and Sir Robert Jones will live high amongst the names of the great surgical figures of all time. They have left imperishable records in the history of surgery, and they have formed a science where none previously existed. They have lighted a beacon whose light has spread to every corner of the surgical world, and have opened up a prospect of recovery in the hearts of thousands who would otherwise be destined to useless cripplehood. They have done this through the force of their teaching and examples, but they have done more in that they have laid down the unalterable basis of treatment on which the inevitable progress will be founded. The Medical Institution has, therefore, determined to commemorate their work by forming a Hugh Owen Thomas and Robert Jones Library of Orthopaedic Surgery, in which it is hoped that every phase of that branch of surgery will be represented. An appeal is therefore made for contributions of books and articles on the subject. These will form the nucleus of what it is hoped will be a complete orthopaedic library in which the student, the post-graduate, the practitioner, and the surgeon may learn all that is being done in this branch of our work, and may refresh themselves at the spring of knowledge which flows from the works of the two men in whose name the library is being founded. It is therefore hoped that all

who hear or read this lecture, who have themselves contributed towards the literature of orthopaedic surgery, will send to us at the Liverpool Medical Institution a copy of their books or articles to help us in the formation of the Hugh Owen Thomas and Robert Jones Library, so that our effort, which is unique, may also be complete in its accomplishment."

Battersea Power Station: Control of Sulphur Fumes

An application has been made by the London Power Company for an extension of the new Battersea power station by the installation of three additional boiler units. It will be recalled that when the station was erected there was much misgiving owing to the possible evolution of oxides of sulphur. A special procedure was adopted by the company for the treatment of flue gases to remove the sulphur fumes. The results of this gas-washing plant have been tested from time to time, and daily tests have been made for sulphur dioxide in the air in Battersea Park. No increase in the average amount of sulphur has been disclosed, nor has there been any evidence of grit nuisance. A report by the Government Chemist's Committee was presented to Parliament in December to the effect that the committee had been impressed by the success attained in treating the enormous volume of gases (20 million cubic feet per hour from one chimney), making it a notable pioneer achievement in chemical engineering. But the committee recommended that before the completion of the station was sanctioned it would be well to have regard to developments in technical knowledge of the removal of sulphur from flue gases that had in the meantime been forthcoming, the subject being a new one and one in which further improvement was to be reasonably expected. A conference has since taken place attended by representatives of the four local authorities, at which it was felt that in view of the Government Chemist's Committee's report it would be difficult to oppose the extension of the station, but that the Electricity Commissioners, before sanctioning extension, should apply more definite conditions, in particular that there should be used at the station continuously the most efficient methods which may for the time being be reasonably practicable for elimination of smoke and grit, the prevention of the discharge of sulphur and its compounds into the atmosphere, and the avoidance of noise or vibration, the decision of the Electricity Commissioners, in agreement with the Commissioner of Works and the Minister of Health, to be binding upon those concerned. The London County Council proposes to join with the local councils (the Westminster City Council, and the Chelsea, Kensington, and Battersea Borough Councils) in making these representations to the Commissioners.

Middlewood Hospital, Wadsley

Sir John Quarmby, chairman of the West Riding of Yorkshire Mental Hospitals Board, opened, on February 13th, a new admission hospital for the treatment of patients from the areas served by the Wadsley Mental Hospital. The new institution, to which the name of "Middlewood Hospital" has been given, is connected by a subway with the older building, but is otherwise detached and self-contained; it is approachable directly from the Middlewood Road, without the necessity of traversing the precincts of the main institution. It is intended for the reception, investigation, and treatment of all newly admitted patients of both sexes. Special facilities are available for close observation and special therapy, and it will thus be possible to separate patients whose prospects of recovery are hopeful from others who will receive treatment eventually in the Wadsley Hospital. In addition to two villas for male and female convalescent patients respectively, the new institution comprises an administration and treatment centre, connected on either side by open-fronted covered ways to wings, which will accommodate fifty male and fifty female patients. The central part contains quarters for a resident matron; a lecture room, which will be available also for entertainments; a dispensary; a dental room; a photograph room; rooms for *x*-ray, electrical, and other forms of treatment; and a kitchen and stores. On the first floor there is accommodation for the matron and the domestic staff. The wings for the patients are similar in arrangement. Each contains a small waiting room and nurses' room; an examination room, with a bathroom and clinical room; seven single-bed rooms; three dormitories of three, five, and ten beds respectively; a nurses' duty room; a dining room; two day rooms; a ward scullery; and treatment rooms for hydrotherapy and continuous bathing. All the day rooms, dormitories, and single-bed rooms have a southerly aspect, and are provided with glass-roofed verandahs for open-air therapy. There is also a solarium, which is directly accessible from the day room and the five-bed dormitory. The accommodation on the first floor of both wings is intended, in the main, for patients who do not require active treatment in bed. The two villas are self-contained units, with a dining room, lounge and loggia, kitchen, living room, two six-bed, one five-bed, and two single-bed rooms in each. Double hung windows, with panes of small size and concealed cords, stopped to limit the extent of opening at the top and bottom, are in all rooms used by patients. The wide expanse of ground in front of the buildings is to be laid out as gardens, including grass plots for tennis and bowls, and with open shelters. It is not anticipated that the total cost will exceed £48,500. The medical superintendent, Dr. Arthur Pool, assisted at the opening ceremony, with Dr. W. J. N. Vincent, who was medical superintendent from 1911 until 1933.

Reports of Societies

STERILIZATION OF WOMEN: MEDICAL AND EUGENIC CONSIDERATIONS

The Section of Obstetrics and Gynaecology of the Royal Society of Medicine combined with the Eugenics Society on February 15th for a discussion on sterilization of women, including indications—medical and eugenic—technique, and the legal position. Mr. EARDLEY HOLLAND was in the chair.

MEDICAL INDICATIONS

Mr. VICTOR LACK mentioned five categories of diseases in which sterilization might justifiably be considered. The first was chronic progressive general diseases, such as invariably ran a downhill course, as, for example, chronic rheumatic endocarditis, chronic nephritis, diabetes, and some nervous diseases, such as disseminated sclerosis. Pregnancy in these diseases was a more or less serious risk to the life of the mother, though in some instances it might be possible to allow the patient to have one or two children before sterilization. The second group consisted of chronic diseases in which there was a theoretical possibility of recovery—for example, pulmonary or other tuberculosis and hyperthyroidism. The third group consisted of mental diseases, including epilepsy. His own procedure was to tell the patient who had had puerperal insanity without obvious cause that there was a grave risk of mental breakdown after another pregnancy, and he felt that, if asked to do so, one was justified in sterilizing such a patient. There were also patients with a bad family history of mental disease who habitually produced mentally defective children. Epileptics presented a difficult problem. They produced a larger proportion of mentally unstable children than the average, but also produced quite a large proportion of perfectly normal children. Epilepsy was frequently worse during

pregnancy. In a further group of obstetrical and gynaecological conditions in which sterilization might be justifiable the commonest single indication was repeated Caesarean section. Most obstetricians did not like a patient to have more than three Caesarean sections. Occasionally osteomalacia—a rare disease in this country—was encountered, and furnished a cause for sterilization, and there was another group of patients who repeatedly got severe toxaemia and failed to carry their pregnancy to term. Of hereditary diseases the family transmission of haemophilia and acholuric jaundice were conditions which might be held to justify sterilization. The times at which the operation might be performed were: immediately after evacuating the uterus, after Caesarean section, and fairly soon after spontaneous delivery or spontaneous abortion. He exhibited a list of seventy-five cases sterilized at the London Hospital during the last five years.

VOLUNTARY EUGENIC STERILIZATION

Dr. C. P. BLACKER, secretary of the Eugenics Society, discussed the legalization of voluntary eugenic sterilization and the safeguards proposed. The discussion of voluntary sterilization in this country had been centred to an undue extent upon the problem of mental deficiency. This was unfortunate; the recommendations of the Departmental Committee (the Brock Committee) related to many other groups of persons, including those who had recovered from mental disorder, persons who exhibited, or were deemed likely to carry in a genetically latent form, physical diseases or defects of a hereditary kind, and people deemed to be probable carriers of mental diseases or defects. The chief contribution to knowledge made by the Departmental Committee concerned an investigation into the children of mental defectives, when it was found that approximately 45 per cent. of such children were either themselves mentally defective or retarded, and only 1 per cent. were regarded as superior—a significant fact in view of the assertion that the sterilization of mental defectives would mean the suppression of genius. The greater number of cases of mental deficiency were attributable in general, in the view of most authorities on the subject, to genetic rather than to purely environmental causes—in short, the primary aments outnumbered the secondary aments. Dr. Blacker presented the case for voluntary as against compulsory measures. Superficially, everyone could think of types of persons and families for whom compulsory measures might be appropriate, but the advantages of a law with compulsory clauses to cover such persons would be negligible in contrast to the disadvantages. Unforeseen complications had arisen as a result of the law which came into force in Germany at the beginning of last year, and which contained compulsory as well as voluntary provisions, specifying nine conditions, including alcoholism, which justified sterilization. The great need, in Dr. Blacker's opinion, was to cultivate a eugenic conscience in this country, so that people for whom in their own interests and the interests of the community sterilization was advisable might be encouraged to submit to it. It must not be made too easy, but the safeguards specified by the Departmental Committee appeared to meet the requirements.

THE LEGAL POSITION

Mr. CECIL BINNEY, barrister-at-law, said that there was no actual section of the law which forbade sterilization, but that did not mean that it was necessarily permissible. Any operation which a reputable medical man performed in the interests of his patient's life or health, of course, would be permissible, but apart from that the sterilization operation might come within the Offences Against the Person Act, 1861, and it had long been held that the person's consent was not a defence in a charge of maiming. Therefore he thought that eugenic sterilization would probably be held to come under Section 20 of the Act just named: "Whosoever shall unlawfully and maliciously wound or inflict any grievous bodily harm upon any other person, either with or without any weapon or instrument, shall be guilty of a misdemeanour, and being convicted thereof shall be liable . . . to be kept in penal servitude." He thought also it might be held, quite apart from the way in which sterilization was done, and even supposing it could be done without wounding, that sterilization was contrary to law as constituting a public mischief. With regard to lunatics and mental defectives, if the sterilization of normal persons was a crime, the sterilization of persons who could not give consent and did not properly understand what was proposed would be so much more a crime; or if in normal persons it was not a crime at all, it might well be a crime in relation to these others. It might even fall under Section 322 of the Lunacy Act, 1890, regarding ill-treatment of lunatics. The sterilization of a person for reasons of health was always lawful; for eugenic reasons, probably unlawful; for reasons unconnected with health or eugenics, certainly unlawful; and in the case of lunatics and mentally deficient persons, always unlawful unless undertaken for health reasons.

TECHNIQUE OF STERILIZATION

Mr. V. B. GREEN-ARMYTAGE said that a reliable technique for tubal sterilization had been the objective of surgeons for years. Many operations had been devised for the temporary occlusion of the tubes. He demonstrated on the screen what he considered to be the best method of temporary sterilization, consisting of the mobilization of the terminal inch of the Fallopian tubes and, using fine catgut, the burying of the tube in a letter-box slit in the broad ligament. The technique was quite simple and bloodless, but care must be taken that the vascular supply of the distal end of the tube was not disturbed, and particularly that no tension existed. The advantage of the method was that in the event of remarriage or altered conditions the buried but functionally healthy portion of the tubes could be freed again. Many instances of such freedom being followed by pregnancy had been recorded. The speaker then illustrated the different surgical procedures for permanent sterilization by abdominal operation. Every surgeon had his own preferred device, but the regenerative capacity of the tubal epithelium was quite remarkable, and time and experience occasionally indicated a desirable change of technique. One method was simple ligation with thread or silk without cutting a portion of the tube, but that had only to be mentioned to be condemned as useless. Another method was that of crushing one inch of the tube and then tying a double loop of thread, but in a small percentage of cases the oviduct had reconstructed itself under the ligated area. A third method consisted of ligation in two places and resection of the intervening inch, touching the cut ends of the tube with pure carbolic or cautery. This method was successful probably in more than 90 per cent. of cases, but it could be improved upon by riding and plicating one tube over the other, or burying each cut end in separate compartments of the broad ligament. The fourth method, of salpingectomy, was as near ovum-proof as possible. Recently an American surgeon had modified the technique by transplanting the divided uterine ends of the tube after deep cornual resection of the isthmial portion into a stab incision on the anterior surface of the body of the uterus, and this had many advantages. All these were abdominal procedures, and there were many patients who were averse from laparotomy. For that reason he had devised many years ago a technique for tubal sterilization per vaginam, a perfected technique very applicable to the eugenist, as it implied only a few days in bed and no risk or pain. This operation, which he said he had found eminently satisfactory on many scores of occasions in parous or nonparous women, he proceeded to demonstrate, again by means of the epidiascope. Briefly, it consisted in opening the urethro-vesical pouch per vaginam, and, the bladder retracted and the uterus brought down, the cornual end of each tube could be excised by any method preferred, the uterus being replaced, the cut edges sewn, and the vaginal incision closed.

THE NECESSITY FOR SAFEGUARDS

Dr. A. J. LEWIS of Maudsley Hospital, after stating that the number of persons sterilized for therapeutic

reasons was relatively small, argued that in considering eugenic indications regard must be paid to the individual case rather than to any generalization. The German figures, based on a huge mass of material, illlustrated the vice of statistics in that no account was taken of subdivisions, and no discrimination was made as between hereditary factors and circumstances in the environment. The necessity of studying the individual case became more evident when it was remembered that it was not only a question of preventing the transmission of bad qualities, but of securing the propagation of good. It might be very reasonable to allow a person to propagate, notwithstanding serious illness, on account of valuable qualities. There were a number of people who now asked for sterilization, not on any sure ground, but because of morbid fears or because of frivolous inclinations, and clearly it was desirable that there should be safeguards to protect these people against themselves, and safeguards also for the psychiatrist and his surgical colleague against subsequent action by a person the sterilization of whom had appeared very desirable, and whose consent at the time had been obtained.

Dr. BINNIE DUNLOP said that, although a member of the Eugenics Society, he did not agree with the society's proposed Bill, which would by implication make it illegal for any overburdened couple to obtain sterilization. One of the greatest needs of the time was that poor people who were not able to practise contraception effectively should be able to get relief from their troubles by this procedure, yet the Bill would make sterilization on economic grounds illegal. In his view sterilization should be available to any woman who had two children or had had two confinements. Dr. K. B. AIKMAN, also a member of the Eugenics Society, was of opinion that safeguards in this matter were of capital importance, and that was borne out by some researches in California, where, apart from mental cases, there had been a large number of sterilizations for entirely frivolous reasons, and likely to bring the method into disrepute. Mr. PITT-RIVERS considered that too frequently what were put forward as medical indications for sterilization were really theological indications in disguise.

Dr. STEPHAN WESTMANN described the effects of the recent legislation in Germany, and mentioned that in German institutions the number of mental defectives who were found to have come of mental defective stock on one or both sides was considerably higher than the number mentioned for this country—he quoted figures for Germany of 60 or 70 per cent. With regard to the technique, one method which had proved very useful in Germany, and which he illustrated by the epidiascope, was the making of a loop in the tubes by the use of catgut sutures.

Mr. ALECK W. BOURNE brought forward a technique which he had recently developed. Briefly, it was a method of cauterizing the uterine openings of the tubes by a diathermy electrode. He had had the opportunity so far of using it in only about six cases of women suffering from nephritis or cardiac disease. After some initial failures he was able to succeed, and now he could get both tubes occluded, as shown by the lipiodogram. The electrode used was curved to follow the lateral wall of the uterus. The operation was very quick and safe, and could be done under gas in about two minutes.

Dr. LETITIA FAIRFIELD said that while purely frivolous sterilization was undoubtedly illegal, and sterilization of mental defectives was also illegal for another reason, she could not understand why Mr. Binney had assumed the illegality of sterilization on eugenic grounds. Would a jury, for example, condemn the sterilization of a girl of a haemolytic family who had brothers and cousins victims of haemophilia? Would they consider that to be a case in which the practitioner undertaking sterilization was not acting for the patient's good? It was with such cases that the courts would have to deal. The subject of eugenics had been made a dangerous one by the various types of crankiness to which it had given release. It was a difficult subject quite apart from theological grounds, and brought in various side-issues of social importance. For example, the hope was expressed that a man who believed on good grounds that he would transmit hereditary insanity would submit himself for voluntary sterilization before marriage. But, apart from offspring altogether, what sort of a mate was such a man going to be for any woman?

Dr. LEONARD FINDLAY considered that Dr. Blacker would have had a better case if he had supported his argument by cases of deaf-mutism, haemophilia, or pseudo-hypertrophic muscular paralysis rather than mental deficiency and mental diseases. Confusion had arisen from the grouping together of mental deficiency, mental disorders, and physical conditions. Was mental deficiency as now understood hereditary, and would these eugenic plans rid the world of mental deficiency? He gravely doubted it. The case had not been made out that mental deficiency was to any large extent hereditary. He believed that in the larger proportion of cases it was due to difficult birth; whether brought about by obstetrical intervention or not he could not say.

Dr. BLACKER, in reply to the remark of Dr. Westmann, said that the figures for mental defectives who had defective parents were so much higher in Germany than in this country simply because in Germany the term "oligophrenia" covered many people who in this country would be regarded not as mental defectives but as retarded normals

X-RAY CINEMATOGRAPHY

Two demonstrations of cineradiography, by different methods, were given in London last week, the first at the British Institute of Radiology, on February 14th, by Dr. A. E. BARCLAY of Cambridge, and the other the following day at the Section of Radiology of the Royal Society of Medicine by Dr. RUSSELL REYNOLDS. Accounts of Dr. Reynolds's technique have appeared on several previous occasions in the *Journal*, and notably on May 5th, 1934 (p. 813), but he has now greatly improved it by speeding up the exposures.

THE DIRECT METHOD

Dr. Barclay said that for the special purpose of studying the movements of the alimentary canal he had devised a method whereby radiographs were produced at a rate of up to eight per second. While very appreciative of Dr. Russell Reynolds's indirect method, he thought that the photography of the image on the fluorescent screen, which is the basis of that method, would not furnish the desired detail for the purpose he had in view. He had turned, therefore, to a direct method, taking a series of pictures full size on ordinary *x*-ray film cut in long strips. With the assistance of the Medical Research Council, and using a design prepared by Mr. W. S. Farren of the Department of Aeronautics at Cambridge, a very rapid serial *x*-ray camera had been constructed by the Cambridge Instrument Company. The size of the picture given was 5 by 5 inches, and the speed from one to eight pictures per second. The maximum speed was certainly not as fast as one would like for a detailed study of the mechanism of swallowing, but for some movements a speed lower than even one per second was desirable, and this was possible with the machine by hand operation. The instrument was not intended primarily as a cinematograph, but for the detailed analysis of fine movements, although, of course, the serial pictures could be reproduced on ordinary-sized cinematograph film and projected.

The preliminary experimental work, Dr. Barclay added, had occupied eighteen months. It was no simple matter to move a 5-inch-wide strip of film through a distance of 5 inches, stopping dead and starting eight times a second, and at the same time punching, so as to locate each picture, and compressing between intensifying screens for each exposure. In recalling the history of this subject, he mentioned that many years ago—he believed as far back as 1909—Groedel of Nauheim made pictures of the stomach, using an apparatus of this type, and the tracings from such pictures were the standard ones produced in textbooks to illustrate gastric peristalsis. L. G. Cole of New York had made an apparatus to give pictures of 10 by 12 inches at the rate of four a second; Jarre of Chicago one of smaller size for the study of movements

of the pelvis of the kidney; and Alvarez of the Mayo Clinic for animal studies.

When satisfactory lengths of film were obtained they had to be developed and interpreted. Dr. Barclay described some studies which had been made with bismuth pills coated with celluloid. Pills 1/16 inch in diameter were obtained, and two or three were taken at intervals the night before the examination. The next morning these were found well scattered throughout the large bowel. On exposures being made at the rate of eight a minute the movement of these pillules was found to be very small and slow. When the movements were plotted on tracing paper it was found that most of the pillules were travelling, not onwards, but round in circles, suggesting that these minor movements of the large intestine were not propulsive in character, but were designed to turn the contents over, and promote absorption and equality of consistency.

THE INDIRECT METHOD

At the meeting of the Section of Radiology Dr. RUSSELL REYNOLDS said that since he demonstrated his cineradiographic technique before the Royal Society of Medicine last May considerable progress had been made in many directions. Nearly 300 subjects had been examined, and quite a library of films had been accumulated. By improvements in the recording apparatus and slight variations in the current constants it had been possible to increase the speed at which many of the subjects were taken by as much as 50 per cent., and this had proved to be particularly valuable in the examination of the heart. He refrained from an exposition of technique, having given it on the previous occasion, but he added that his chief aim from the beginning had been to evolve a technique simple enough to be used as a routine in radiological practice in suitable cases. That was why he had chosen to develop the indirect in preference to the direct method; by the former the screen image was photographed on to 16 mm. film. One important point which had to be considered was the safety of the patient and his protection from undue exposure. This was met by synchronizing the excitation of the *x*-ray tube with the movements of the camera shutter, and patients could now be cineradiographed without running any greater risk than would be incurred in ordinary *x*-ray examination. The times of exposure varied with the subject and with the part to be examined. The thorax in the ordinary way, for example, received an exposure of anything between 1/22 and 1/32 of a second.

Dr. Reynolds showed three reels of film. The first dealt with movements in the limbs and joints. The advantages of this method of examination in orthopaedic cases were in the observation it afforded of the range of movement after injury, and in cases where an operation had been performed progress could be studied and recorded from time to time. The movements of the hand, elbow, shoulder, knee, ankle, and cervical spine were illustrated in this way. The second film showed movements of the alimentary tract, normal and in various pathological states. One of the most striking features was the variation in the appearance and behaviour of the stomach and duodenum in the same subject at different times. The film illustrated well the way in which the stomach contracted. The mechanism of mastication and deglutition was also well shown. The final film showed various moving structures in the thorax—the pleurae and lungs, also the heart, including the physiological heart in its normal state and after excessive exercise, and the heart in auricular fibrillation and in pericarditis with adhesions. Dr. Reynolds added that it was now possible to incorporate in the film, along with the picture of the heart's action, an electrocardiographic tracing, and by means of lantern slides he described and illustrated the apparatus by which this was done. He also demonstrated how the films could be projected on a small screen, 15 inches by 12 inches, for consultation room or classroom purposes, the image gaining in clearness with the diminution of size. It was now possible to produce short endless bands of positive film illustrating some particular phase of movement, which could be projected for examination indefinitely, and, of course, could readily be sent from place to place for comparative investigations.

In the subsequent discussion one clinician present acclaimed the work as the greatest advance in *x*-ray technique since Roentgen's original discovery.

INTRACRANIAL TUMOUR

At the annual meeting of the Devon and Exeter Medico-Chirurgical Society, with the new president, Dr. F. N. SIDEBOTHAM, in the chair, Mr. G. P. HAWKER, in association with Dr. F. A. ROPER, read notes on, and showed two cases of intracranial tumour, both having been seen in the first instance at the West of England Eye Infirmary by Mr. Hawker.

Dr. Roper said that the first case related to a married woman, aged 38, in whom there was a history of pituitary tumour, diagnosed at Moorfields Hospital some five years ago. At that time there was sudden loss of vision in the right eye, preceded by two days of violent headaches and vomiting. Operative treatment had been considered when the case first came under notice. The headaches had recurred of late, and vision in the left eye had deteriorated rapidly. To-day there was double clear-cut optic atrophy; tendon reflexes were absent at the knee and ankle. The Wassermann reaction was ++ in the cerebro-spinal fluid, and the latter was obtained under high pressure. Lymphocytes were 100 per cent.; globulin + (Nonne-Apelt).

Mr. HAWKER, referring to the doubtful radiological findings, said that it was difficult to entirely exonerate that part of the skull by *x*-ray examination. He pointed out, however, that the optic disks were filled in, and were demonstrative of secondary atrophy. As regards treatment, in any case, operation was attended with risk, and the sum total of vision was limited to perception of light in the left eye. The Wassermann reaction in this case gave a line which was worth while following up.

Mr. A. A. GAIRDNER had seen cases where recovery of vision followed the removal of a tumour, but in this instance he could see no definite signs in the pituitary area, and diagnosis was further handicapped through a chart of the visual fields being unobtainable. Dr. R. N. CRAIG could see nothing abnormal in the radiograph of the skull, while the vascular changes seemed to conform on the one hand with the specific findings in the cerebro-spinal fluid.

Dr. ROPER, in his reply, said that the facial appearance was suggestive of a pituitary tumour, but he would certainly give trial to an intensive anti-syphilitic treatment. Mr. HAWKER, in answer to the president, said that the atrophy was so complete as to place the loss of vision beyond hope of recall.

Mr. HAWKER reported that in the second case, a married woman aged 40, there had been a blow in the middle of the forehead some two and a half years ago, with unconsciousness lasting for twelve hours. Fits were coincident with recovery of consciousness, and still occurred from time to time. She had complained of headaches for the past fifteen months. The vision of the right eye began to fail in July or August of 1934, some two weeks before she first attended at the Eye Infirmary. When seen in August double papilloedema was present, and more marked in the right eye, where there was about 4 D of swelling. There was concomitant paralysis of the right sixth nerve and diplopia, and slight contraction of the visual fields. The sixth nerve paralysis cleared up in two days, and, outside the headache and remaining ocular signs, symptoms were lacking. The cerebro-spinal fluid was normal in all respects, including a negative Wassermann reaction. In September the papilloedema had become lessened, although headaches persisted, but in October she failed to report owing to severe vomiting. When seen in January of this year it was found that vision had gradually deteriorated since the onset of vomiting, and that sight was now *nil*.

Mr. GAIRDNER said that the available signs showed an increasing intracranial pressure rather than a primary interference in sight, which he could locate to the area of the sella turcica. He could not see definite changes from the radiographs produced, and he did not think that the diagnosis could be advanced without taking a ventriculogram. At the moment the evidence was very insecure, and the pressure might be in the frontal area or elsewhere, but from the evidence at hand the presence of a pituitary tumour was most unlikely.

Dr. CRAIG noted the absence of intention tremor, and that there was no loss of memory or other mental changes. Again, there was no sign of backward pressure on the motor areas—no morning exacerbation of headaches—no yawning, no irritation of the tip of the nose. Again, the fits were not reconcilable with the cerebro-spinal cell findings. In all this he could find no cause for the diagnosis of frontal tumour, and hazarded, instead, a condition secondary to the head injury.

Dr. ROPER, in pointing to radiographs of the sella turcica, remarked that the appearance of the posterior clinoid processes was suggestive of erosion.

OBSCURE MYOCARDIAL DISEASE

At a meeting of the Section of Medicine of the Royal Academy of Medicine in Ireland, held on February 1st, with the president, Dr. V. M. SYNGE, in the chair, Professor L. ABRAHAMSON read a paper on a case of heart block, illustrating a type of obscure myocardial disease.

Professor Abrahamson said:

The patient, a male aged 25, was admitted to the Whitworth Hospital on November 22nd, 1934, complaining of giddiness, which had been noted over a period of four years. There was no history of breathlessness or of any other symptom referable to the heart. No aetiological factors could be elicited. On examination the pulse rate was 32 and blood pressure 120/60. The apex beat was located in the sixth interspace, one inch outside the left nipple line. There were no murmurs. The first sound in the mitral area was loud, but not sharp. Radioscopic and radiographic examinations showed considerable enlargement of the heart, including mainly the ventricles, but also the auricles. Electrocardiograms showed (1) auricular fibrillation, (2) complete heart block, and (3) bundle-branch block. Investigation for a septic focus in teeth, antra, etc., was negative. The Wassermann reaction was negative, and remained so after a provocative dose of N.A.B. The urinary system was normal; there was no goitre in the neck or chest. During his stay in the hospital the patient developed three syncopal attacks rapidly relieved by adrenaline. The *x*-ray shadow materially increased in size during a period of seven months, the transverse diameter showing an increase of three-quarters of an inch.

Professor Abrahamson said that he had brought this case forward, not because of the irregularities, however interesting, but because of the grave myocardial disease which formed the central feature of the case. The aetiology was obscure, and the speaker instanced other cases of a similar nature, in which the cause remained equally obscure, in spite of the most detailed investigation, embracing all the usual known aetiological agents. He believed that this type of myocardial disease offered a fruitful field for research.

Dr. H. F. MOORE, referring to bundle-branch block, wondered if the old nomenclature or the new was correct, and said that he personally favoured the former. He mentioned a personal case somewhat similar to the one described by Professor Abrahamson.

The patient during the last few months had been getting worse and worse and more waterlogged. It was decided to do a total thyroidectomy. This was a rather desperate hope, but he (Dr. Moore) thought it was worth taking the chance. Fibrillation was controlled fairly easily by the ordinary maintenance dose of digitalis. There was a transient bundle-branch block for every second beat. The digitalis was apparently a bit too much for the bundles, and did not reduce his pulse rate much. An electrocardiogram was taken, and showed disappearance of the bundle-branch block. Total thyroidectomy was done that day, and so far the patient was doing very well. Cases of auricular flutter with bundle-branch block were very difficult. The flutter was controlled by digitalis and quinidine, but it was impossible to control the fibrillation. He had recently had a patient of this type under his care. He left hospital with a fairly normal pulse rate, but his relations were warned that at any time he might have a bad attack. Six weeks after leaving hospital he had a pulmonary embolism, and died in about a month. The heart, on section, showed a most extraordinary condition. The right branch and bundle were intercepted about two and a half centimetres from the node and were replaced by fat. Examination of sections from the heart had not yet been completed.

Dr. G. THOMPSON said he had seen a case somewhat similar to Professor Abrahamson's. When first under observation it was obviously a rheumatic case, and while attending hospital the patient developed auricular fibrillation. An electrocardiogram showed left bundle-branch block. She was treated with digitalis, and developed complete heart block. The extraordinary thing about Professor Abrahamson's case was, he thought, the radiological findings, especially the increase in the size of the heart in such a short time. The speaker's personal belief was that bundle-branch block was quite a common abnormality, and the reason it was not diagnosed more often was because the diagnosis could only be made by the electrocardiograph.

Ayerza's Syndrome

Dr. E. T. FREEMAN gave an account of Ayerza's syndrome. The patients suffered from chronic cyanosis, which reached such a degree that they were described as "black cardiacs." The condition had been ascribed in South America to lesions in the pulmonary artery due to syphilis, but cases had been described by Parkes Weber and attributed by him to various chronic respiratory troubles. The essential findings in all described cases were erythraemia, the most intense cyanosis leading to the description "black," and dyspnoea. There were some bronchitic sounds, moderately raised blood pressure, somnolence, and death, with or without cardiac failure. There was no marked splenomegaly. All the Spanish-American authors, and also Warthin, regarded syphilis as essential. Parkes Weber did not, nor, apparently, did Ayerza.

Dr. Freeman's own case was first seen in March, 1931, in consultation. The patient was cyanosed and very dyspnoeic, and had had some kind of fainting attack. Her chief complaint was drowsiness and loss of energy. Her red blood count was 5,630,000, the blood pressure 150/89. There was cyanosis but no distress. The van den Bergh reaction was normal and the basal metabolic rate 6. In November, 1934, she was again admitted to hospital. The cyanosis was then extreme, the face and limbs were purplish-black to black at the tips of the fingers and toes. The red blood count was 6,900,000, blood pressure 160/90, basal metabolic rate 9. There was some subcutaneous oedema. The Wassermann reaction was +++. Spectroscopic examination of the blood was normal. Death occurred after sixteen days, of which thirteen were spent in an oxygen tent. Only a partial post-mortem examination was allowed. The lungs showed chronic congestion; the heart was much enlarged; the right and left ventricular walls being two centimetres in thickness. The aorta was atheromatous; the pulmonary artery dilated, but otherwise normal.

Dr. H. F. MOORE mentioned a case of Ayerza's disease which had been under his care in 1927. The patient, aged 32, complained of dyspnoea on slight exertion, which he had first noticed about six months before admission to hospital: he had to sit down after going up a few steps. The heart was somewhat enlarged to the right, and there was a slight mitral systolic murmur propagated towards the axilla. He was quite cyanosed. On *x*-ray examination he was labelled as a case of pulmonary tuberculosis. There was no clinical evidence at all of tuberculosis: sputum and Wassermann reaction were negative. Dr. Moore thought for a time the case was one of dilatation of the pulmonary artery. The patient was treated with digitalis, but left hospital of his own accord before much could be done for him. It was not a syphilitic case.

Dr. FREEMAN, in reply, said that the electrocardiograph showed nothing abnormal. There was no chest *x*-ray. The patient had been cyanosed for three years, but said that symptoms of cyanosis had begun to appear four years before this.

CORRESPONDENCE

The number of letters received for publication is so large that we must ask correspondents to make their points briefly and to regard 600 words as the upper limit of length.

Government of India Bill: Problems of Physical Welfare

SIR,—The physical welfare of the Indian masses is of such cardinal importance that I venture to draw the attention of our profession to its prospects under the Government of India Bill, now before Parliament.

It seems to be assumed that welfare has been immeasurably improved under the present rule, and that it will deteriorate under native rule. India has certainly been protected from the severer ravages of war, pestilence, and famine; maternal and infant lives have been saved by the hundreds of thousands. But the last census showed in consequence an increase of population by thirty-four millions; while the rice and wheat crops—the main food supply—were reduced by one and a half million tons. The medical research workers at their conferences in 1923–6 unanimously resolved that India was in a "state of grave emergency," and that "the greatest cause of poverty and financial stringency in India is loss of efficiency resulting from preventible disease." In 1932 it was reported to the Government of India that "the average duration of life in India is still about half what it ought to be, the rate of infant mortality and the morbidity figures are still deplorably high, the increasing prevalence of tuberculosis and other diseases which are associated with malnutrition suggests that the conditions of life of the people are steadily deteriorating." The late Public Health Commissioner with the Government of India, in his last annual report, commenting on this problem in his retrospect, says: "Unfortunately it has not received that attention from the central and provincial Governments which its importance would seem to indicate that it should have; its implications are apparently not yet fully realized."

The Government has, indeed, been repeatedly advised to establish a Central Board of Health to study the subject, to give such guidance to the local administrations as has been found essential and welcome in the federal systems of the U.S.A., Australia, Canada, and in Great Britain. The Simon Commission recommended it (vol. ii, p. 153). The Indian Minister concerned (Sir Fazl-i-Husain) agreed. But it was ruled out by the Finance Department last year. Indeed, it is doubtful if the conclusions of any such Board, dealing as the problem demands with intimate questions of birth and marriage, would have any chance of acceptance by the local administrations, so long as they emanated from a British-controlled central Government.

What, then, is proposed to meet this inevitable crisis, this pending catastrophe? Mr. Churchill is apparently content to leave the present authority at the centre, with increased powers to the Provinces to go astray. The Government, on the other hand, proposes to strengthen the centre and to throw various responsibilities on the representative Indian authorities from which they cannot escape. This surely is the right way, and in committee it will be necessary to consider if certain clauses and schedules cannot be improved with this object.

In view of the small relative consideration given to these matters by most British administrators and by the Joint Select Committee it is essential to emphasize the predominant importance of the welfare of the masses; to recognize the extreme gravity of the problem of increasing population and diminishing nutrition; and with all the expert guidance we can give them to charge the Indian people themselves, under their many enlightened would-be rulers, with the solution that has baffled British administration, involving, as it must, religious and social conditions, with which Indians alone can deal.—I am, etc.,

House of Commons, Feb. 15th. FRANCIS FREMANTLE.

Psychiatric Clinics

SIR,—The admirable letter of Dr. Edwin Goodall in your issue of February 9th (p. 274) raises a very important issue for the future development of psychological medicine in this country from the point of view both of treatment and of teaching.

The still Philistine state of public opinion with regard to mental illness makes it very desirable that mental hospitals should continue to improve their conditions for admission, especially for recent admissions, by providing separate blocks, and in other ways attempt to achieve a hospital rather than an institutional atmosphere. This is not enough from the wider aspect. The policy of attempting to make everything centre round the mental hospital as at present we understand it is, I believe, a mistaken one. The vast majority of illnesses in which psychological factors or psychological manifestations are of importance will never require accommodation of the type offered by mental hospitals, and, in fact, the majority will continue to be suitable for out-patient treatment.

Reasons of geography alone would make it desirable to have the out-patient clinics much nearer to centres of population than most mental hospitals are situated. Policy of another kind also dictates that these clinics shall not be, as a rule, within the grounds of mental hospitals, otherwise many patients will simply refuse to go to them, as has been pointed out in an article in the same issue of the *British Medical Journal* by Dr. Whittingdale. Moreover, there is a very large overlap between general medicine and psychological medicine, and for all these reasons the ideal place for an out-patient clinic seems to me to be in the general hospital of the neighbourhood. Our experience at Guy's has also been that it is quite possible to use beds in a general ward with very considerable benefit in a high proportion of those who are judged suitable for in-patient treatment and whose condition is not such as to necessitate their entering a mental hospital. And in these cases judged suitable for treatment in the medical wards of a general hospital I include not only psychoneurotic conditions, but what are commonly called minor psychoses as well.

This is, however, only a development on a small scale of what, in common with Dr. Edwin Goodall and many others, I should like very much to see established in this country as part of a general hospital—namely, psychiatric clinics of a type that is found at present mainly abroad, and to which an increasing number of psychiatrists in this country now owe a valuable part of their training. If the teaching of psychological medicine is ever to be brought to the same level as that of other branches of medicine with us, psychiatric clinics included in, or very closely associated with, general hospitals are imperative. The Maudsley is the only example approximating to this that we have in this country.

Dr. Goodall's apprehension that local authorities may fail to realize the importance of this point is only too well founded. As for public opinion and the hope of making it more sympathetic to mental illness in general, there is no question but that psychiatric clinics would go far more quickly towards that goal than any modification of the existing mental hospital could hope to do.—I am, etc.,

London, N.W., Feb. 11th. R. D. GILLESPIE.

The Riddle of the Psychoses

SIR,—Dr. Ian Suttie has, to my mind, hit the nail on the head. The psychoses, he emphasizes, are "failures or distortions of social adaptation." If this be true it obviously follows that only in a milieu of social relationships can the psychoses (or neuroses) be (1) properly studied and (2) properly treated. Long ago Aristotle taught that man in his essence is a social (or rather, civic) animal, πολιτικον ζωον. This truth is dawning on us again now. The essence of a man lies in his active relationship with his neighbours and his neighbourhood. Hence a mere "psychology" is a dangerous abstraction from the true science of man, which is psycho-sociology. Our mistake has been hitherto to deal with the neurotic's psyche first and foremost, and to consider his environment as a matter of very secondary importance. It is fully time that we should direct our attention also to the tasks of (1) studying our patient's environment, and then of (2) adjusting him to that environment. But further, as Dr. Suttie says, this is a "unitary" problem. The patient in his kinetic relation to his environment should form a unity, and therefore the doctor who proposes to help him back to that unity must himself be united to him through sympathy; he must enter, so to speak, into his patient's life. Unless this unitary and unified principle be at work in any given case little good can be expected, however big and well endowed the institute, however detailed the research. Subordinated to the unitary and human principle of treatment, all these specialisms can be most helpful; merely "collated" they are useless—and often worse. If, then, Dr. Suttie's plea for a greater consideration of the "environment" in treatment be granted, we might do well to consider next what kinds of environment are likely to prove most useful. What are the minimum requirements of a psychotherapeutic "environment"?—I am, etc.,

North Queensferry, Fife, Feb. 10th. A. J. BROCK.

SIR,—It is difficult to think charitably of the misleading statements made by Dr. Suttie in his letter published in the *Journal* of February 16th. One wonders whether he has allowed himself to generalize from a limited and unfortunate experience of one or two mental institutions, or whether a fear that the service may "swallow vast sums," which he considers could be better appropriated elsewhere, has allowed his judgement in this matter to become warped. In any case it seems hard to satisfy him. He blames the mental hospitals for treating patients away from their homes, although in the majority of cases removal to hospital has only resulted because the situation at home has become intolerable. If we send out a trained worker to investigate the home conditions we are again culpable, and recently in these columns he has made it clear that our efforts to treat patients in the earlier stages while still in their homes, by means of clinics, likewise fail to find favour in his eyes.

It is just because the mental hospital service holds the view that "the psychoses are failures or distortions of social adaptation" that we consider that even a thousand hours or more spent with one patient will not suffice to a complete understanding of the case unless in addition the social contacts of the patient are also understood by investigation in the environment in which they are normally made.

It is manifestly untrue and unfair to state that the social worker, the mental nurses, and the specialist supervising occupation—Dr. Suttie presumably refers to an "occupations officer"—are psychologically untrained. Most social workers employed by mental hospitals have been specially trained as psychiatric social workers for the post, either at the London School of Economics or elsewhere, and having taken a practical and theoretical course obtain a certificate after passing an examination. Occupation officers are also usually specially trained for mental hospital work, unless they are themselves certificated mental nurses, and in any case work under the immediate supervision of the psychiatric physician (medical officer) on the mental hospital staff.

In my own hospital every nurse, on being accepted for training after a period of probation, is given a booklet from which the following brief extracts are taken:

"If the foregoing brief outline has been grasped, it will be understood that the mental patient is for practical purposes in the position of the child, and the task of the mental nurse corresponds with that of the parents. This is an important conclusion, because it implies that normal methods of training and encouragement, and re-education in its broadest sense are likely to be most fruitful in results."

"It is our aim, then, to so cultivate relationship with the patient that in spite of her previous experiences which have resulted in feelings of incapacity, expressed as fears, solitariness or open hostility, she shall be able to build up from her hospital experience a feeling of confidence in herself, expressed as hopefulness and interest in and co-operation with others."

"As convalescence is established, greater reliance should be placed on the help and co-operation of patients, and they should be encouraged to assume responsibility for certain duties, and be given a chance to take a lead as opportunity offers."

Throughout, the importance of re-establishing social relations and the methods to be employed to this end are insisted on.

I agree with Dr. Suttie that our problem is "the problem of human life, of interest development, and social adaptation under varying domestic and cultural conditions," nor do I suppose that the majority of my colleagues in the mental hospital service think otherwise or are less competent or less concerned than he is to make their contribution to its solution.—I am, etc.,

W. J. T. KIMBER,
Medical Superintendent, Hill End Hospital.

St. Albans, Feb. 18th.

Maternal Mortality

SIR,—Feeling deeply conscious of the responsibility for the present maternal mortality rate imposed upon us by the Press and public, I have gone into the matter very carefully with the view of ascertaining exactly where the guilt lies. The sources of my investigation are largely, but not entirely, letters to the *British Medical Journal*, and the excellent lecture on the Prevention of Maternal Mortality delivered by Mr. W. Gilliatt at King's College Hospital Medical School during the session 1933-4. The figures quoted are from the Registrar-General's returns, and from J. Smith's "Causation and Source of Infection in Pueperal Fever" (Department of Health for Scotland, 1931).

When speaking of maternal mortality it is just as well to bear in mind that approximately 40 per cent. of deaths are due to sepsis and 60 per cent. to conditions such as eclampsia and other toxaemias, shock, haemorrhage, embolism, abortion, ectopic gestation, etc., combined. Then, next, the total death rate per 1,000 births was 4.7 in the decade 1855-64, 5.1 in the decade 1885-94, and 3.9 in the decade 1915-24. This indicates, if anything, that the total maternal mortality rate has improved from 1885, but that a bad patch was struck in between. The corresponding figures for the maternal mortality rate for puerperal fever only are 1.6, 2.6, and 1.5, which further indicates that the deaths from puerperal fever have not undergone a progressive increase, and, if anything, cases other than those due to sepsis must have decreased. Unfortunately, we have no strict analysis

to indicate whether fatal eclampsia, shock, abortion, ectopic gestation, etc., are individually more common than they used to be, although in some sources abortions are considered to be much more numerous.

A series of 2,000 fatal cases analysed in the departmental report mentioned above indicates that in 626 cases (31.3 per cent.) there was a "primary avoidable factor," such as (*a*) inadequate ante-natal care by the patient or doctor; (*b*) error of judgement on the part of the doctor; (*c*) lack of reasonable facilities (presumably in emergencies in outlying districts); and (*d*) negligence on the part of the patient or her friends. The fault is placed upon the doctor in 283 cases, approximately (14.15 per cent.), and on the patient or her relatives in 269 out of the 626 cases. So far as fatal puerperal sepsis is concerned—for example, septicaemia or peritonitis—it appears that 85 per cent. are due to *Strept. haemolyticus*, and this germ, so I understand (see H. G. Langdale-Smith's letter of December 17th, 1932, to the *British Medical Journal*), is found in the genital tract of many women who do not become septic. If this be the case, and bearing in mind that it is accepted that the organism may be sprayed by the doctor or nurse, to say nothing of the parturient herself, her husband, mother, and family, the other two factors leading to the clinical condition—namely, the locus minoris resistantiae (excluding tears) and the patient's general resistance—are the most important. In my humble opinion the latter is the key to this problem.

Unfortunately, the general resistance is not determined solely by the nutrition, or the social status, because one of the "black" areas in London for maternal mortality due to sepsis is possibly the most affluent. If anything, the patient's attitude to the pregnancy and labour is of fundamental importance. In support of this I may mention only one instance—namely, that puerperal sepsis occurs more frequently in unmarried women than in their less embarrassed sisters. Undoubtedly pain lowers the resistance, and although an anaesthetic may prolong labour, the beneficial effect psychologically makes it worth while. It has been suggested that puerperal sepsis should be tackled by submitting pregnant women to a skin test on the lines of the Dick test, and then immunizing the susceptibles; but so far nothing tangible has been accomplished.

There are a few intriguing points in this subject—namely: (1) Why has Denmark such a low maternal mortality rate? And what steps have been taken to find out why, in England, the Queen's nurses can boast in 1928 a low figure of 1.9 per 1,000 births? Does this figure exclude the cases sent to hospital? (2) Fifty per cent. of septic cases occur in "spontaneous" labour. Are they due to autogenous infection or because the patient has had her hands on the perineum? (3) What is the death rate of the various diseases which have the *Strept. haemolyticus* as a causal agent? (4) Does the stress of "getting round," and the patients clamouring at the surgery, flurry the doctor, or can hospitals, where the time factor is of little consequence, show better figures than the general practitioner? (5) Are we 14.15 per cent. away from perfection, and how can we expect perfect parturients with perfect friends? (6) Perhaps antisepsis and patience may help the 14.15 per cent.?—I am, etc.,

Hull, Feb. 7th. L. I. HARDY.

SIR,—We owe Sir Comyns Berkeley a debt of gratitude for his proposal that the profession should voice its views on maternal mortality, protected, if desired, by anonymity. I suggest two main lines of thought: (1) The insufficient experience (as opposed to teaching) of the present-day medical student and post-graduate. (2) The failure on the part of modern obstetric teachers to stress the all-important distinction between things which have stood the test of time or experience and have earned the right to be looked upon as a *sine qua non* of good midwifery, and those innumerable new theories and discoveries whose value is still unproved.

The first is the more important. It must almost inevitably fall to every doctor, sooner or later, to deal with midwifery cases, and no amount of theoretical teaching can fit him for this responsibility. Midwifery is a subject of which almost everyone, unfortified by adequate practical experience, is afraid. How many obstetric disasters have been precipitated because the ignorant accoucheur, faced by what he took to be a crisis, became afraid! No one should undertake midwifery who cannot recognize and rotate an occipito-posterior position, deal with a shoulder presentation or a case of placenta praevia or eclampsia, or remove an adherent placenta—for all these may occur in general practice out of the reach of specialist assistance. Only a sense of competence to deal with all these will make it possible to approach a case with the equanimity without which good midwifery is impossible or the courage required to do nothing.

This result can only be brought about in one of two ways. Either midwifery should be taken out of the hands of the general practitioner and handed over to those specially experienced in it, or cases should be shared more reasonably between pupil midwives (who in a large proportion of cases do not intend to practise) and medical students. To adopt the first alternative would be little short of a national disaster. The second might save the situation. It is equally important to increase the number of resident hospital appointments available. Most young graduates can obtain house-surgeon appointments, although the majority have no intention of practising surgery. It seems anomalous, therefore, that in the one branch of medicine where special experience will almost inevitably be required there should be so little opportunity of obtaining it. Post-graduate classes do not meet the case: the students get little or no practical experience, and their attention is focused on the abnormal rather than on the normal. It will take time to create new resident appointments; but could not something be done at once by increasing the responsibility of the medical student, say, during his last month of midwifery (the time, if necessary, being extended for this purpose) and allowing him during that month to deal with such abnormalities in his cases as would ordinarily be entrusted to a junior obstetric resident? He knows just as much then as he will know when (if ever) he is appointed to his first obstetric post.

If I seem to have over-emphasized this aspect of the case, my own experience as a student is my excuse. I attended the usual twenty cases, but delivered only seven, all the others being abnormal, including hydrocephalus, central placenta praevia, and eclampsia. This so affected my outlook on midwifery that even now I find it difficult to undertake what purports to be a normal confinement with the same confidence with which I should approach a major surgical operation. I went to my first resident obstetric appointment ignorant of the meaning of full dilatation of the cervix, and believing it meant the os was so many inches across. In my case, however, a series of resident obstetric appointments enabled me to overcome, to some extent, the defects of my training. But I feel great sympathy with the patients whose doctors, through lack of adequate experience, know as little as I did when I qualified, and with the doctors themselves my sympathy is scarcely less.

Lest I should seem to cast an aspersion on my medical school, I merely sign myself

Z.,
F.R.C.S., F.C.O.G.

February 14th.

Maternal Mortality in Rochdale

SIR,—It is gratifying to those who are concerned in the campaign to reduce maternal mortality in Rochdale to find that the distinguished obstetricians who conducted the investigations on which the report in your issue of February 16th (p. 304) was based approve of the steps taken, and consider that these should be generally adopted. As I was medical officer of health during part of the time referred to, some amplification by me may be of value to other medical officers.

Rochdale had the highest maternal mortality rate in the country for the five years ending 1931, and a rate much below the average for the two succeeding years. The figures were:

	Maternal Mortality per 1,000 Live Births		
	Average 5 Years to 1931	1932	1933
Rochdale	8.52	1.76	2.87
England and Wales ..	4.27	4.24	4.42

As there was no lessening of trade depression, unemployment, or poverty in the years 1932 and 1933, this dramatic change cannot be ascribed to improvement in either standards of living in general or nutrition in particular. When I assumed duty in 1930 I found that my predecessor had compiled very exhaustive records of the medical histories, circumstances, and causes of death of all maternal mortality cases. Two facts emerged: that the vast majority of these cases had not had adequate ante-natal supervision; and that, in most, there had been some form of difficulty in labour which had necessitated emergency intervention. In practically every case one avoidable factor could be definitely singled out as the cause of the fatality.

It was decided that full publicity was essential, and, with the full co-operation of the council, the local branch of the British Medical Association, the Church Union, the Midwives' Association, and various social and educational organizations, an intensive campaign was launched. Public lectures were given at least once weekly; the attendances were good and got progressively better; the excellent local press gave us great assistance. The actual causes of death in childbirth were frankly stated, and it was shown that many could have been saved had the abnormality which led to the fatal termination been recognized and remedied in time. It was emphasized that most cases followed on some form of intervention during labour; that this could usually be rendered unnecessary by careful examination and supervision during the pregnancy; and that it should be resorted to only when there were definite medical indications and not merely to hasten what must, from its nature, be a harassing experience for all concerned. We realized that publicity which created anything in the way of a "pregnancy or childbirth phobia" would do more harm than good. To avoid this we stated definitely that the expectant mother who was found on examination to be normal, and who carried out the instructions given her, had no reason to anticipate any trouble, particularly if no attempts were made to expedite the course of nature at her confinement. A very strong public opinion was roused, and expectant mothers, doctors, and midwives were "on their toes" to avoid any sin of omission or commission which would tend to perpetuate the town's disgraceful record.

We were lucky in having an enthusiastic secretary, and a preponderance of members of a very fine type in the local branch of the B.M.A.: with their help meetings were arranged with the doctors, and throughout we had their cordial assistance and also that of the Midwives' Society. It cannot be too strongly stressed that without such co-operation no municipal maternity service can be entirely successful, and it is therefore incumbent on an authority to discontinue or amend any practice to which the doctors or midwives take reasonable exception.

It is obvious that there should be the fullest possible co-operation between the ante-natal clinic staff and those functioning at the confinement. We tried to achieve this in three ways. First, the matron or another member of the teaching staff and two pupil midwives from the maternity hospital attended the ante-natal clinic, thus ensuring that hospital cases, at least, had someone present at the confinement who took some part in ante-natal examinations and supervision. Secondly, in all cases where any abnormality was discovered, a notification was sent forthwith to the doctor and midwife concerned. Whether the examination showed abnormality or not a full report of the ante-natal findings was sent to the maternity hospital, doctor, or midwife. In the last case this was available for the doctor if necessity arose for him to be called in. On the reverse there was a tabulated form for report on the actual labour and the puerperium, which was returned to the ante-natal clinic by the medical officer of the hospital, doctor, or midwife, as the case might be. This gave a most useful check on our ante-natal findings, and was filed at the clinic for reference on future occasions. Thirdly, we encouraged private practitioners to attend the clinics when their cases were being examined, and offered facilities for them to do the examination themselves if they so preferred.

The experience of Rochdale should, particularly in view of the report of Drs. Oxley and Phillips and Professor Young, establish definitely that the various theories which have been advanced to account for the persistence of a high mortality rate—malnutrition, stress of present-day life, etc.—have little bearing on the problem.—I am, etc.,

ANDREW TOPPING, M.A., M.D., D.P.H.

London, S.E.3, Feb. 16th.

SIR,—In their most interesting paper Drs. Oxley and Phillips and Professor Young provide tables showing a decline in deaths ascribed to pregnancy and child-bearing for the Rochdale area; and they give evidence to prove, they conclude, that the improvements tabulated are the outcome of a deliberate effort, the details of which their paper describes. Added scientific value would be given to their conclusion if it could be shown that no comparable improvement had taken place in other towns, embraced within the original Ministry of Health survey, to mention those cited by them—Barnsley, Bradford, Dewsbury, Halifax, Huddersfield, Sheffield, Wakefield, Bolton, Oldham, Preston, Stockport, and Wigan, where, presumably, no "drive," in the Rochdale sense, has been pursued. Could not tables be produced for each of these towns so as to remove any shadow of doubt that natural variations in the incidence of disease do occur in groups of years and might have played a part in the remarkable improvements obtained in Rochdale, in spite of no fundamental change in social conditions, or the presumable health of the women concerned, or the personnel?—I am, etc.,

Bolton, Feb. 17th. M. DOUGLAS, M.B.

Training in Midwifery

SIR,—I am writing in support of Dr. Malcolm Donaldson's letter in the *British Medical Journal* of February 2nd. Although the great majority of medical students practise midwifery after qualification, while the great majority of nurses with the C.M.B. certificate do not, in a hospital in which both students and pupil midwives are trained the latter always have the first call on the cases. The result is that while every pupil midwife gets twenty cases before she is signed up to take her examination, many students obtain less than this number. During the last session here, which was especially favourable for students, thirty-eight of them delivered 708 cases (instead of the 760 required): during the same period about 80 pupil midwives each delivered the requisite number. As the number of our medical students is increasing each year, the problem will become more acute.

I personally would not maintain that to train a medical student adequately for the practice of midwifery it is essential that he should personally deliver twenty cases: the actual deliveries are a small part of the training. I do maintain, however, that it is ridiculous that a large number of women who have no intention of practising obstetrics should deliver the stipulated number of cases, while many medical students who will practise attend a smaller number. Why should we waste training and deliveries on people who are not going to make use of what they learn in training?

Part of the difficulty is that in many cases the hospital makes a substantial financial profit out of its training of midwives, while the medical student, in the majority of hospitals, makes no contribution for his training to hospital funds. The hospital authorities are therefore not particularly interested in the medical students' training. I suggest that no pupil midwife should be trained until she has signed an undertaking to practise midwifery for five years after certification.—I am, etc.,

Leeds, Feb. 11th. ANDREW M. CLAYE.

Chest Hospitals and Clinics

SIR,—It is with no little interest that I have read the views of Drs. Davidson, Heaf, and Stobie in connexion with the need for the reorganization of the existing tuberculosis service. Their vision of the future of tuberculosis hospitals, sanatoria, and dispensaries as institutions for diseases of the chest is in keeping with the idea—now firmly established—that pulmonary tuberculosis, in the light of modern advances in thoracic medicine and surgery, cannot continue to be isolated into a water-tight compartment, but has to be recognized as but one formidable example of chest disease as a whole. Dr. Heaf, in his instructive article of January 5th (p. 8), has referred to "chest clinics" on the lines laid down by myself. I should like, if I may, to be permitted to make a brief reference to my views on this subject, which have already been amplified elsewhere (*Brit. Journ. Tuberc.*, 1931, xxv, 115; *Chest Disease in General Practice*, H. K. Lewis, 1932, p. 164).

It is generally recognized that pulmonary tuberculosis, apart from its close alliance to other respiratory diseases, may, by reason of its varied modes of onset and symptomatology, simulate at one time or another almost any disease in general medicine. In the so-called "tuberculosis dispensaries," with which I am more especially familiar, and where, as Dr. Stobie rightly points out, reform is so much overdue, at least 50 per cent. of new cases sent for diagnosis at each session prove to be either free from disease or suffering from some non-tuberculous pulmonary or other mischief. To detail some of the conditions I have encountered at a tuberculosis dispensary: they include lesions in the upper respiratory tract with secondary changes in the lungs, "apical catarrhs"; bronchitis; bronchiectasis; non-tuberculous pulmonary fibrosis; intrathoracic new growths; the pneumoconioses and mycoses; many cardiological conditions—for example, rheumatic heart disease (mitral stenosis), with congestive heart failure, and syphilitic and hypertensive heart disease, with congestive lung changes; thyrotoxicosis; blood diseases; gastro-intestinal disease; etc.

The recollection of the fear and dread which the word tuberculosis still excites in the minds of many laymen leads one to ask whether the title "tuberculosis dispensary" is an ideal title for a centre for the early diagnosis and prevention of the disease. If the fullest use is not made of these centres their existence is indeed superfluous. There can, in my opinion, be little doubt that were this title to be replaced by that of "municipal" or "chest clinic," or if, as Dr. Stobie has suggested, this work were carried out by special departments of the general hospitals, the difficulty to which I have referred would not arise to the same extent. Tuberculosis dispensaries, hospitals, and sanatoria, equipped, as they should be, with a specialist staff and with modern facilities for dealing with the diagnosis and treatment of intrathoracic disease, should not confine their attention purely to tuberculosis, but should envisage the whole field of chronic chest disease, of which pulmonary tuberculosis is but a part. With these chest clinics, hospitals, and sanatoria, there must be close co-operation on the part of the medical schools, so as to ensure an adequate training of medical students and practitioners in respiratory disease in general and pulmonary tuberculosis in particular.

In a paper which I contributed to a discussion on the use of tuberculosis institutions, at the provincial meeting of the Tuberculosis Association at Cambridge in March, 1934 (*Medical Officer*, June 16th), I summarized the position in regard to the need for reorganization of the tuberculosis dispensary. I feel that there is now a unique opportunity for a progressive authority like the London County Council, in conjunction, perhaps with such an influential body as the Royal College of Physicians and with the medical schools, to render real assistance and service to the practical progress of an important branch of medicine.—I am, etc.,

London, W.1, Feb. 13th. PHILIP ELLMAN.

Haemorrhage during Operations, especially Thyroidectomy

SIR,—Mr. Slesinger thinks the amount of blood lost during a thyroidectomy, as mentioned in my communication, excessive. I have watched a good many surgeons perform this operation, including several recognized experts, and I would estimate the blood lost as at least as much as the figures given. Of course, if the goitre is small or not very vascular the loss does not exceed two or three ounces, but the majority of the cases that come to me have large thyroids, full of vessels. The fact is that, until they actually weigh or measure it, surgeons greatly underestimate the amount of blood they shed during a somewhat prolonged operation. Ask the surgeon or the onlookers to say how much blood they reckon has been lost, and double or treble it to be really near the mark. It is a very salutary discipline to obtain an exact figure.—I am, etc.,

Clifton, Bristol, Feb. 16th. A. RENDLE SHORT.

Pulmonectomy

SIR,—I have read with great interest and appreciation the article on pulmonectomy, by my friend Mr. G. A. Mason, in the current issue of the *Journal*, and offer my hearty congratulations on his brilliantly successful cases. At the same time I must take exception to the opening sentence: "Total pulmonectomy, although occasionally attempted, was in no instance successful until 1931. . . ."

It is not well that the work of pioneers in any field of human activity should be forgotten or ignored, and there is good reason for recalling to the minds of the younger generation of surgeons the fact that in September, 1895, William Macewen removed the left lung of a patient suffering from pulmonary tuberculosis with cavitation and empyema. It is true that the lung was small and contracted, as in Mr. Mason's second case; it is true also that the lung had been partially destroyed by the tuberculous processes; and it is also true that in a very narrow technical sense the lung was not removed in its anatomical entirety by operation, as a small portion of the apex of the upper lobe was left *in situ*, where it was adherent to the pleural dome and the subclavian vessels. Though in this very limited sense technically a subtotal pulmonectomy, Garre and Quincke and others accept Macewen's case as the first recorded case of a successful total pulmonectomy, and characterize it as a "brilliant success."

The patient was alive and well in 1911, sixteen years after the operation. I enclose a copy of photographs taken at that time. I believe he was alive ten years later, but of the latter date I am not sure.—I am, etc.,

Middlesbrough, Feb. 17th. WM. S. DICKIE.

Hypertrophic Stenosis of Pylorus

SIR,—I have read with interest Mr. Twistington Higgins's criticism, in the *Journal* of February 9th, of my remarks on the palpable tumour of hypertrophic stenosis of the pylorus. It appears to me that we require further investigation into the anatomy and pathology of the pyloric canal before we can clearly separate our cases into normal and abnormal. I know of no anatomical or pathological description which does this. At the one extreme we have a pyloro-duodenal junction which is quite impalpable and can only be defined by the encircling veins. At the other extreme there is a projecting white, hard tumour involving the whole pyloric canal. Somewhere between these two extremes lies the threshold of the normal. One has seen several cases where, after withdrawal of the pyloro-duodenal region, no tumour could be seen, but the pyloric canal felt hard to the touch. These cases did perfectly well with the usual muscle-dividing operation, but had no palpable tumour when palpated before operation. It is quite possible that a more expert examiner might have been able to recognize these unenlarged hard pyloric canals through the abdominal wall.

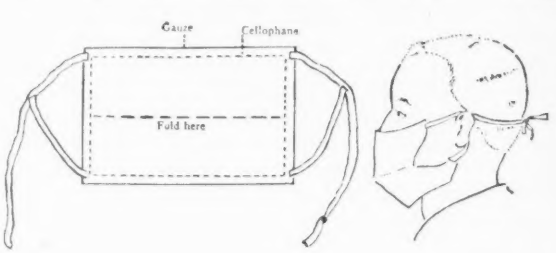
It seems to me that, if we are going to insist on a palpable tumour, a considerable number of suitable surgical cases will fail to reach the surgeon in time.—I am, etc.,

Belfast, Feb. 10th. P. T. CRYMBLE.

Surgical Masks

SIR,—I was most interested in Dr. C. G. Paine's article in the *Journal* of February 9th (p. 243) on the importance of face masks in puerperal infection. Last March I was unfortunate in having two cases of severe infection, of what should have been "clean" wounds by the haemolytic streptococcus. Both patients were operated upon within a few days of each other, and both were cases of chronic appendicitis. Subsequent experiment in the bacteriological department showed that the surgical masks in use, composed of one layer of voile, were entirely inefficient, and readily transmitted haemolytic streptococci when a Petri dish was "talked to." I have no doubt that inefficient masking was responsible for the infection.

Until such trouble is actually encountered one is apt to regard the ordinary mask as efficient protection for the patient against the risk of infection. When it is realized that almost every surgical mask in use is definitely inefficient, and that during an epidemic of respiratory disease 50 per cent. of the nursing staff of a hospital may be carrying haemolytic streptococci in their throats,[1] the surprising fact is that so called "unexplained" wound infections are not very much more common. Various workers have investigated the subject, and have tested the efficiency of different masks. It is extremely difficult to stop the passage of organisms by using gauze or other



filtering materials, and a popular type of mask made of six layers of gauze is quite ineffective.

I have used the cellophane mask devised by Blatt and Dale[2] for nearly a year, and have found it excellent. It works on the deflection principle. A piece of cellophane, 6 by 6¾ inches, is sewn between two layers of gauze, and tapes are attached as shown in the diagram. When worn, the mask fits tightly round the chin, but allows air to escape at the sides, thus deflecting it, so that the air in front of and below the wearer is sterile. Actually, it is found that the air escaping at the sides is also almost sterile, because the droplets apparently cannot turn the corner and so are caught up on the cellophane and gauze. Blatt and Dale recommend cellophane of 0.001 inch thickness. I have found a rather thicker substance to be better, and use diophane No. 1200. The masks can be sterilized a few times in the autoclave; they are inexpensive, light, and efficient.—I am, etc.,

Birmingham, Feb. 11th. R. K. DEBENHAM.

Tubercle Bacillaemia in Acute Polyarthritis

SIR,—In co-operation with Professor Reitter, manager of the hospital of Vienna, I examined specimens of citrated blood and articular fluids in cases of polyarthritis. We examined nearly 300 cases of polyarthritis acuta, with the result that in 71 per cent. of the cases virulent tubercle bacilli are found in the blood and in the fluid from the joints. This statement was generally confirmed by the Pathological Institute (Professor Maresch).

Dr. Courmont, professor in the famous medical school of Lyons, made similar investigations on a larger scale, and came to the conclusion that there could be no doubt regarding the presence of tubercle bacilli in the blood in cases of polyarthritis and in the other diseases mentioned by me. The issue of the *Journal de Médecine de Lyon* for October 20th, 1933, "est consacré à la bacillèmie tuberculeuse."

Reitter and I were able to control the blood of a large number of patients with polyarthritis up to as many as twenty-six times in the same case during a period of five years of observation. There was an absolute

[1] Walker: *Surg., Gynecol. and Obstet.*, January, 1930.
[2] Ibid., September, 1933.

parallelism between the clinical symptoms and the presence of tubercle bacilli in the blood. The bacilli appear in masses on the first day; they may be found for weeks, and disappear slowly with convalescence. The bacilli come back to the blood before every relapse. Every attack of an intercurrent infection, such as a chill, or even menstruation, may bring about a remobilization. The positive results are very striking in cases of rheumatic endocarditis, and these have also been controlled by the Pathological Institute, Vienna. The tubercle bacilli are not only found in the blood, but also in the muscle of the heart in cases of recrudescence endocarditis (Aschoff nodules). The tubercle bacilli are also to be found in the tonsils in rheumatic cases, as I was able to prove with Professor Amersbach, head of the Laryngological Clinic, Prague.

Our results caused Professor Pillat to make an ophthalmoscopic examination of the eye in cases of polyarthritis. He found foci of choroiditis tuberculosa in 61 per cent. of the cases. The fundus of every case of polyarthritis now has to be controlled.

There are three methods available for demonstrating the presence of tubercle bacilli in the blood. It is the characteristic of all three methods that citrated blood has to be washed with distilled water until every trace of haemoglobin has disappeared. Then (1) the sediment can be stained according to the Ziehl-Neelsen process; or (2) it can be injected into a guinea-pig; or (3) it can be planted on a culture medium. The last-named process involves much time, but gives the best results, just as the culture method is absolutely necessary for the diagnosis of typhoid, diphtheria, dysentery, cholera, etc. I often use all three methods, but prefer the culture method and direct staining method because I am not able to afford guinea-pigs for the injection of the blood sediment of each of my 20,000 cases. Three months are necessary to exclude a positive result in the last two methods. The third method can only be successfully carried out in the hands of bacteriologists experienced in the biology of the Koch bacillus.

There is no doubt that the future will confirm the simple fact of the presence of tubercle bacilli by means of such three simple methods in a proportion of about 70 per cent. But an intimate co-operation is necessary between the clinician and the pathologist, because the blood of every case must be examined several times, in order to clear up the connexion between tubercle bacillaemia and clinical symptoms.—I am, etc.,

State Serotherapeutic Institute, Vienna. E. LOEWENSTEIN.

Reactions following Gold Injections

SIR,—The recent correspondence in the *Journal* on the use of gold in the treatment of rheumatoid arthritis has prompted me to record the following two interesting experiences which I had while treating such cases in the Orthopaedic Department of the Royal Victoria Infirmary, Newcastle-upon-Tyne. The first is an example of the possible toxic effects of these salts.

A middle-aged woman, with advanced rheumatoid arthritis, was being treated with an oily suspension of sodium aurothiomalate. She was given the following quantities at four-day intervals: 0.05 gram, 0.1 gram, 0.2 gram (six doses). That is, she had a total of 1.35 grams of the salt. Two days after the last injection she complained of slight headache and giddiness, and complete loss of taste. Examination revealed no gross abnormality; blood pressure, 140/90; urine contained a trace of albumin, but there were no microscopical abnormalities; fundi normal. There was no swelling of the tongue, but the papillae looked slightly more prominent than usual. Common sensation was normal. There was complete loss of taste for sweet and salt, and loss for bitter only in the left half of the tongue. In three weeks all headaches and dizziness had disappeared; urine was normal. In six weeks taste for bitter had completely returned, and in seven weeks that for salt had returned. It took five months for sweet taste to return, and even now, eight months after the treatment, it is not quite so acute as normal. The arthritis has improved greatly.

The second case is also interesting. A man about 30 years of age, with a chronic infective arthritis affecting the larger joints and spine, was receiving aurotherapy. He had remarked to me that particles of gold sometimes came out of his fingers. On one occasion, seven minutes after an intramuscular injection of 0.2 gram of an oily suspension of aurothioglucose, I saw in the sweat on the volar aspects of his fingers shining particles of gold. As this happened after a subsequent injection a very rapid absorption of the salt was suggested. The fact that the sweat glands act as excretory organs for the salt is also very interesting. I have never noticed this in any other case so treated, and have never seen such recorded. It would be interesting to know if others have had a similar experience.—I am, etc.,

Newcastle-upon-Tyne, Feb. 12th. THOMAS MOORE.

Auto-haemotherapy in Haemoptysis

SIR,—The article by Drs. Morlock and Pinchin in the *Journal* of October 27th, 1934 (p. 762), called my attention to a method of treatment of haemoptysis with which I had not been familiar. In July of last year I was called to a case of haemoptysis, which I treated by auto-haemotherapy, and this method of treatment may be deemed worthy of further trial.

I had previously observed that a case of advanced pulmonary tuberculosis with severe haemoptysis was much relieved by a transfusion of blood from a suitable donor, and that the haemorrhage ceased almost as soon as the transfusion was given: some cases of purpura had also responded to auto-haemotherapy. Wishing to avoid the use of morphine in this case of haemoptysis, I gave the patient, a woman of 32, an intramuscular injection of 5 c.cm. of her own blood. While I was cleaning the syringe the frothing and coughing stopped, and the patient was relieved of her acute distress.

The details of the treatment of this case are as follows:

First day, midday injection of 5 c.cm. own blood: haemorrhage ceased for twenty-four hours.

Second day, midday, recurrence of haemorrhage: in my absence a colleague gave an injection of morphine, which rendered the patient less conscious of her distress, but a considerable quantity of blood was swallowed and subsequently vomited. Same day, 4 p.m., 5 c.cm. patient's own blood injected: haemorrhage ceased for twenty-four hours.

Third day, 4 p.m., patient asked for another injection to relieve the tight feeling across her chest. On this occasion I failed to get the needle into a vein, and on the recurrence of haemorrhage I ordered another injection of morphine to be given.

Fourth day, 10 a.m., 10 c.cm. of the patient's own blood was injected.

Fifth day, 10 a.m., 10 c.cm. of blood from a healthy adult was given.

After this no further haemoptysis occurred.

I can find no references to the treatment of haemoptysis by auto-haemotherapy. The use of sera is, of course, recognized, and is mentioned by Drs. Morlock and Pinchin. The action of the patient's blood, however, is surely not the same as that of prepared sera. And "protein shock" would scarcely account for the effect it produced. This case certainly illustrates the inadvisability of giving morphine if any other haemostatic is available—and haemotherapy provides a readily available substitute.—I am, etc.,

Swatow, S. China, Jan. 6th. N. D. FRASER.

Some Health Resorts of Southern Europe

SIR,—At this season of the year the problem of convalescence after an acute respiratory illness is often a difficult one. If finances are adequate, the advantages of change of scene and the benefits of a warmer climate are often recommended. Some locality in Southern Europe is usually the first consideration, and the choice lies between the many seaside resorts of Southern France, Italy, Spain, or Portugal. The definite decision is not an easy one. Personal experience is probably limited, and exact information is not available. The following expression of opinion may be of assistance.

No foreign health resorts in winter bear much resemblance to our mental pictures of them. These are developed from the delightful descriptions and beautiful poster advertisements seen in their respective State tourist offices and elsewhere. As these are invariably taken at the best season of the year, the reality in winter must inevitably fall short of the glamorous expectations thus aroused. The wise physician will carefully prepare his patient for weather disappointments at any resort chosen, so as to avoid, if possible, any physical or psychical relapse. In spite of anything which is believed to the contrary in Great Britain, it is impossible to avoid winter in any part of Europe. Its extreme rigours may be mitigated, but the "Sunny South" of popular imagination does not exist in the months of November, December, and January. It is therefore unwise to send a convalescent to Southern Europe until early February. Before that date it is preferable to keep the individual in an equable indoor temperature rather than run the risks incidental to travelling in weather which may be dull, wet, and cold.

It would be foolish, however, to deny that during the earlier months of winter there are not beautiful warm sunny days with clear skies in Southern Europe, but these also occur occasionally on the south coast in England. In both regions they are the brilliant exception to the general climatic conditions. After the middle of February there is a definite swing in the balance in favour of going abroad to convalesce. The days will be warmer, the skies more clear, and there will certainly be more hours of sunshine. It is at this period that the respiratory convalescent should go south to avoid the climatic risks incidental to the months of March and April at home. As regards a definite recommendation there may be much argument.

Personally I found the Estoril region of the Portuguese Riviera not suitable on account of the frequency of the cold north winds. The good hotels, the golf course, and the casino cannot compensate the convalescent if his walk in the sun is upset by cold breezes which raise dust from every unpaved spot. Malaga, the central point of the Spanish Riviera, offers very little in the way of recreation, but its climate in winter is very suitable for convalescence, owing to its clear skies, abundant sunshine, dry atmosphere, and comparative absence of wind. The island of Majorca cannot be recommended, as quite cold weather may be experienced until after Easter, and winds from snow-covered mountains are apt to be treacherous. The Naples Riviera of Southern Italy, including the island of Capri, has an uncertain climate in the early months of the year, and days of heavy rainstorms with cold winds are not infrequent.

The French Riviera and the Northern Italian Riviera are blessed with many beautiful towns and all the amenities and gaieties of civilization, but although in winter there are many fine days, the climate cannot be depended upon, and the sudden atmospheric chill at sundown must always be remembered. Sunny Spain is by no means always sunny, but Malaga is a very favoured portion of Spain. The seeker after winter sunshine cannot make a serious mistake in going to Malaga, and there is no serious drop in the temperature in the late afternoon. This city is also a centre for many delightful short motor runs, and its comparative nearness to Gibraltar—less than three hours by road—is a great advantage to a convalescent.

It can be definitely stated that even in spite of present exchange disabilities hotel prices abroad are not higher than those which would be paid for similar accommodation, under less pleasant conditions, in England.—I am, etc.,

Naples Riviera, Italy, Feb. 2nd. CHARLES V. MACKAY.

Information on Twins

SIR,—In reference to twinning I may say that practitioners in Aberdeen and neighbourhood have afforded me the facility of studying many specimens of placentae from cases of twins.

It does require a little care to distinguish between uniovular and biovular placentae. There are cases of biovular placentae where the two sets of membranes are very firmly fused, so that the maternal surface is quite uniform, and gives no indication of the presence of two placentae. In such cases one examines the foetal surface and finds that the partition between the two amniotic sacs can be separated into four layers—that is, from one aspect to the other: amnion, chorion; chorion, amnion.

On the other hand, in a uniovular placenta the partition simply consists of two thin layers of amnion, and, further, one may trace surface blood vessels running between the attachments of the two umbilical cords—that is, anastomoses between the two sets of blood vessels. This may be demonstrated by injecting with coloured fluid one umbilical vein and noting the fluid passing out of the vein of the opposite cord. In my series of cases uniovular twinning occurs only in about 25 per cent. of all cases of twins of the same sex: thus identical twins are rare.

Again, in the observation of identical twins I find that it is not uncommon for one of the twins to die, say, from the third to the fifth month after birth. In my series very few pairs of identical twins survive to school age.—I am, etc.,

Anatomy Department, The University of Aberdeen, Feb. 11th. ALEX. LOW.

Diphtheria Immunization

SIR,—I am interested in Dr. W. G. Patterson's letter in the *Journal* of February 9th (p. 276), and would like him to give me some further information. Some years ago I did a series of experiments, using two doses of 1 c.cm. of T.A.F. at various intervals, and I was most definitely not satisfied that two such doses were adequate. I think the longest interval I employed between the injections was three weeks. If Dr. Patterson could let us have some facts, including the original Schick records of those cases in which 90 per cent. were immune after two injections, it would be most helpful. Such information would, of course, only be of practical value if the whole of the 90 per cent. were known to have been Schick-positive originally.

I must add that I should be very far from satisfied with my own work if I only gave 90 per cent. of my Schick-positive children an active immunity corresponding to the Schick-negative level. My aim is, by perseverance, to attain the 100 per cent. level, and I do not think the

actual results fall more than a fraction per cent. below this. I agree entirely that T.A.F. is the antigen to use now that the price has been reduced, but I am completely satisfied with the results obtained by three injections of T.A.M.

Mr. Noel Waterfield's letter in the same issue leaves me somewhat puzzled. He has immunized fifty children, of whom one showed local redness, swelling, and tenderness, while five others developed a small lump which was slightly tender. If my calculations are correct, 12 per cent. of his children showed reaction in some degree. Mr. Waterfield records my own experience of the greater degree of reaction in adults immunized by the "one-shot" method. Of course, fifty cases are not many on which to base an opinion, and I shall be most interested if your correspondent will let us have further information when he has collected, say, 1,000 cases. Our experience of the safety and efficacy of T.A.M. and T.A.F. is based on hundreds of thousands of cases by this time, and we know exactly what to expect as regards duration of immunity. What evidence can we have of the durability of the effect of "one-shot" methods? The whole thing is far too recent, and the cases insufficient in number. I adhere to my view that the best treatment is three injections of either T.A.M. or T.A.F. Some figures relating to T.A.M. and its durability will be published in the near future.—I am, etc.,

London, S.E.5, Feb. 12th. GUY BOUSFIELD.

Fog Glasses for Cars

SIR,—The subject of improving our powers of vision in fog is a matter of the greatest practical importance, which has both physical and physiological aspects. It is therefore fortunate, in view of the pessimistic conclusion to which it leads, that the reply of your contributor to Dr. Ede's letter in the *Journal* of February 9th (p. 280) suffers from a certain looseness of thought or expression, which prevents it being the final word on the subject. For example, *all* rays are refrangible, even though, as in the case of *x* rays, we do not know what will refract them. Also, the distinction between the visible and infra-red rays may not be anything like so clear-cut as he suggests. The visible spectrum extends roughly from 3,900 A.U. to 7,600 A.U., while most infra-red plates work with a maximum sensitivity about 8,000 A.U. Thus, physically, they are not far removed from the visible range. We are all familiar, from work in photographic or radiological dark rooms, with the amazing sensitivity of our vision to dull red light after prolonged exposure to it, and it is at least possible that if large numbers of persons were examined in comparable conditions some might be found with a tolerable sensitivity to what we at present call infra-red. The suggestion has also been made that some drugs may increase our range of vision into the infra-red. These are, I believe, practically unexplored fields, yet their bearing on vision in fog is obvious.

Again, your contributor states: "Fog . . . reflects every light, white and coloured *equally* [my italics] with the objects we want to see. . . ." White and coloured lights are *not* equally reflected. The proportions of bluish and reddish light reflected by particles of moisture depend mainly on their size. The smaller the particles the higher the proportion of blue light reflected, and the greater the proportion of red transmitted. The claim of the manufacturers of nebulite is that their filters cut off so much of the reflected light that they enable the driver to make use of the long-wave light and so see further. The report of the National Physical Laboratory stated that no screens tried, whatever the colour, were found to have this effect in actual practice. A similar action may be obtained more simply (apart from the diminished glare to oncoming traffic) by using coloured screens to the eyes. This is the idea behind the coloured glasses made by Messrs. Theodore Hamblin, Ltd., and described in the *British Medical Journal* (J. D. M. Cardell: 1933, ii, 1205). From personal trial I know that these glasses do cut off a lot of the back glare, and are most comfortable in use, but I have failed to find that they appreciably increase the distance of vision. They have the advantage over nebulite that they enable the eyes to develop some accommodation to yellow light, while when driving behind screened headlights this is spoilt by every white light one meets.

It seems probable that, in order to make effective use of the undoubtedly greater penetrating power of red light, we must reproduce, as far as possible, the conditions obtaining in the photographic dark room—that is, rigorously exclude all but deep red light and give the eyes time to develop (if one may so express it) their latent sensitivity. This involves specially constructed goggles and a considerable amount of research to determine the best compromise between penetration and brilliance. The conditions when driving in a fog by day are not quite the same as those by night. In the former it is the superabundance of scattered light which is the difficulty; at night it is the concentrated back glare of our headlights which bothers us. This might involve the use of different coloured filters for the best results.

In the *Times* of November 20th last I drew attention to the possibilities of improved vision in fog through deep red goggles, and I have reason to believe that some of our manufacturers are investigating the problem afresh. In this we doctors, above all, will wish them every success, and I hope that this letter may lead others to offer suggestions which may hasten its attainment. In the fogs that contain particles so large and so dirty that even infra-red rays cannot penetrate them, however, there seems no possible hope for the ordinary motorist.—I am, etc.,

Winsford, Feb. 9th. W. N. LEAK, M.D.

*** Our contributor writes: Dr. Leak recognizes that infra-red rays are invisible to the human eye, but he suggests that since they are so near to the visible range of light they may at some time and somehow be made visible. The fact remains that these rays, when unconditioned, remain invisible, but when conditioned by suitable apparatus and time we can see their effects. Attempts have been made by navigators to use such apparatus to "see" by proxy through fog at sea. But what can be done on a great ship cannot be done on a small motor car. His suggestion that there are "possibilities of improved vision in fog through deep red goggles" is not borne out by experiment. The wearer of such goggles loses so much light that he is almost blindfolded. One of the most useful devices for controlled lighting in fog (a very old one) is a deep hood projecting forwards over the lamp; this hood keeps the light rays from spreading upwards, and reduces back glare considerably.

Physical Training

SIR,—In your issue of February 9th, under the title of "Physical Training," Dr. Dudley Gurd states: "It is common knowledge that trained athletes are highly susceptible to infections." May I offer two explanations. (1) The so-called susceptibility to infections may be more apparent than real owing to the tremendous prominence given by the Press to illness when it occurs in a famous tennis player, member of a boat crew, etc. (2) Such illness, when it does take place, may be due to the dis-

regard of scientific dietetics by many of those responsible for the training of athletes. The bulk of the diet on such occasions consists of masses of meat, supplemented by articles of food composed mainly or entirely of white flour and sugar. Meat is deficient in certain vitamins and mineral salts, and the white flour and sugar have been deprived of those constituents by milling and refining.

Under ordinary conditions an individual may maintain that state of indifferent or borderline health known as normal on an imperfectly constituted diet, but when the strain of intensive training is thrust upon him the defensive mechanism, which (as much recent research has shown) is dependent upon an adequate supply of food rich in mineral salts and vitamins, and balanced regarding all other components, breaks down. Recent work indicates that the organism requires increased amounts of vitamins when the metabolic rate is raised as in vigorous exercise. Proper feeding would do much to reduce susceptibility to illness, and would greatly increase efficiency during training.—I am, etc.,

London, N.W.1, Feb. 12th. CLEMENT NICORY.

Mephitic Medical Meetings

SIR,—Could not something be done about the ventilation at medical lectures and meetings of our societies? Nowadays almost all involve the showing of lantern slides, for which the room must be darkened for daytime lectures. This means that air inlets and exits are stopped by blinds being drawn beforehand, and these remain down all the time, whether the lantern is continuously used or only now and again, the light being switched on in the intervals. With the still atmosphere and anything from 30 to 150 people in a room, all hygienic principles and cubic space calculations are jettisoned—and this by the medical profession. When, as at some meetings, there is added the smoke from pipes, cigars, cigarettes *ad lib.*, the conditions have suggested to me those mental pictures conceived by Milton of the sulphurous infernal regions. Well justified was Lord Moynihan, when, presiding at the debate on appendicitis last session, he said, *before* commencing the proceedings, "If you go into a badly ventilated meeting you may bet on it being a medical meeting." And, Sir, *he did something about it*; he had the commissionaire open the roof ventilators.

It is during recent years that lantern slides have become an essential part of this phase of our work. It has brought in a factor not considered during construction. I do not know what Lord Moynihan would have done at some of the dozen lectures I have attended during January. I feel confident he would have knocked a hole in the wall. I mean, the question has to be tackled. The conditions are too dreadful.—I am, etc.,

London, W., Feb. 6th. W. M. HEWETSON.

Retrograde Intussusception after Gastro-jejunostomy

SIR,—Please allow me to apologize publicly to Mr. Hamilton Bailey for my blatant error in charging him with the sin of omitting any reference to this late complication of gastro-enterostomy in his book *Emergency Surgery*. I am grateful for his very courteous correction. My mistake is explained by the fact that, though described and well illustrated, the condition is placed in the part of his book dealing with intestinal obstruction instead of among the complications of gastro-enterostomy.—I am, etc.,

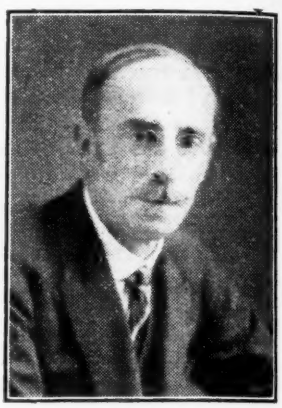
Bristol, Feb. 17th. A. WILFRID ADAMS.

Obituary

JAMES COLLIER, M.D., B.Sc., F.R.C.P.

Senior Physician, National Hospital, Queen Square; Consulting Physician and Emeritus Lecturer on Neurology, St. George's Hospital

James Stansfield Collier, who died from pneumonia at his house in Wimpole Street on February 9th, was born in 1870 as the second son of Alfred Henry Collier, a medical practitioner at Harlington and Cranford, in Middlesex, and Sarah Stansfield. Like his elder brother, Horace Stansfield (1864–1930), the brilliant surgeon, he was educated medically at St. Mary's Hospital, where he qualified with the diploma of the Conjoint Board in 1894, and took the degrees of B.Sc., M.B. (1894), and M.D. (1896) at the University of London, with honours in several subjects. He was demonstrator of biology in the medical school of St. Mary's Hospital and lecturer on the same subject at the Birkbeck Institute. Though a general physician his professional eminence was largely determined by his long connexion with the National Hospital, Queen Square, where he held in turn the following appointments: house-physician, 1898; registrar, 1899; pathologist, 1901; assistant physician, 1902; physician to out-patients, 1908; and physician, 1921. He was also lecturer on neurology at Bethlem Royal Hospital and consulting physician to the Royal Eye Hospital.



In 1904, owing to the resignation of the late Sir Isambard Owen on his appointment as principal of the Armstrong College, Newcastle-upon-Tyne, and the death of Lee Dickinson, St. George's Hospital threw open two assistant physiciancies, and James Collier and Dr. (now Sir) E. I. Spriggs of Guy's Hospital were elected. Collier became physician in 1908 and consulting physician in 1928, but continued to give his much appreciated lectures on neurology. At the Royal College of Physicians of London, where he became a member in 1896, the same year as Dr. Wilfred Harris, also of St. Mary's, and a fellow in 1903, together with Lord Dawson, Dr. Robert Hutchison, and Dr. F. J. Poynton (originally of St. Mary's Hospital), he held many important posts during the last eighteen years. He was examiner for two periods of four years each, councillor, censor, and senior censor (1931); he delivered the Lumleian Lectures on epilepsy in 1928, the FitzPatrick Lectures in the two years 1931 and 1932 on the development of neurology from the commencement of the nineteenth century to the present time, and the Harveian Oration last October, on "Inventions and the Outlook in Neurology." The FitzPatrick Lectures were most interesting, and successfully illustrated by a large number of portraits and diagrams, but unfortunately have not yet been fully published in book form. His original and thought-stimulating Harveian Oration, published in these columns (1934, ii, 707), showed the valuable experience of a general physician in realizing that neurology is undergoing a new orientation, being encroached upon by general medicine, biochemistry, and bacteriology, as is illustrated by recent developments in the treatment of subacute combined degeneration of the spinal cord and of poliomyelitis.

At the Eastbourne meeting of the British Medical Association in 1931 he was vice-president of the Section of Neurology and Psychological Medicine, and in the follow-

ing year, at the Centenary meeting in London, when the usual understanding that the same office should not be held twice by the same individual was relaxed, his outstanding position was justly recognized by his appointment as vice-president of the Section of Neurology.

With great ability, originality, and power of intense hard work Collier was widely regarded as a neurologist of the first rank. He made many contributions to the advance of the subject, among which a few only need be recalled, such as those on subacute combined degeneration of the spinal cord with Risien Russell and F. E. Batten (1900), Babinski's sign, the localizing signs of cerebral tumours, and Bell's paralysis. He was naturally much in demand for contributions to systems of medicine, such as those in the second edition of Allbutt's *System of Medicine*, on amyotonia congenita, subacute combined degeneration, apraxia and agnosia, and the revision of H. C. Bastian's article on aphasia (1910), Christian and Mackenzie's *Oxford Medicine*, Allchin's *System of Medicine*, and Latham and English's *System of Treatment*. He also delivered the Savill Memorial Oration on localization of function in the nervous system (1930), and the Morison Lectures, at the Royal College of Physicians of Edinburgh, on peripheral neuritis (1932). He was an honorary corresponding member of the Société de Neurologie of Paris.

Collier was an excellent and unselfish colleague, a brilliant and graphic teacher, a popular consultant: was quick both in mind and in body, endowed with imagination, philosophical insight, and the art of detachment. Further, he had wide interests—in archaeology, fly-fishing, and athletics. Prematurely cut off at the zenith of his career, his numerous friends will feel the loss of one the like of whom, take him for all in all, they will not look upon again. Their deep sympathy will go out to his widow and children. The funeral took place at the Golder's Green Crematorium on February 13th.

H. R.

Professor EDWIN BRAMWELL writes:

I would like to add something to the tributes paid in your pages to my old friend, James Collier. One comes to know a man when one lives with him, and for a year Collier and I were resident medical officers together at the National Hospital. He taught me much, and the admiration and affection I had for him at that time increased with the passing of the years. Collier was an extraordinarily able clinician. My impression is, indeed, that he was the finest diagnostician I have ever met. One of his colleages, a mutual friend, writes me: "Some did not agree with me, but I always thought he was the most brilliant brain we had in London; everything he said was fresh and original, and he managed to keep abreast of every advance in the whole of medicine, practical and theoretical. I never had five minutes' conversation with him without coming away with fresh knowledge and something to think about. There was no one to approach him where a diagnosis in a complicated case was required; with a look and a sniff and a movement of one shoulder, that we shall all remember, and with a flash of something that must be called genius, he would detect the decisive feature of the case where others with great knowledge and experience, but without the clinical sense, had failed." Collier's remarkable diagnostic powers were no doubt largely due to his wonderful clinical memory. Anything new which he observed—and he was a great observer—seemed to leave a never-to-be-forgotten picture in his mind. As an instance, I may mention an incident which occurred two or three years ago when he happened to be in my wards and I told him I proposed to show him something I thought he had probably never seen before. When the special feature of the case was pointed out to him, he looked at me for an instant with a blank stare, sniffed, tilted a shoulder, wrinkled up his face, and with his characteristic chortle replied, "Don't you remember James Smith, the man in the third bed on the left in Bentinck ward when we were house-physicians?" Then he proceeded to give me a brief summary of the case which I had quite forgotten; and he was right. Collier was a most inspiring teacher. Everything he wrote, and he made many valuable contributions to the literature, was, and always will be, well worth reading. But his written papers do not comprise all that he did for British neurology, for his chance remarks must have often originated lines of thought which initiated the work of others. With Collier there was never any question of jealousy. He kept his emotions behind a screen, but in intimate conversation he spoke of his colleagues with appreciation and admiration, and for all he had a kindly word. Many a pleasant hour have I spent in the wards or by the river with James Collier. Difficult perhaps to know, when one got to know him one found a most lovable personality.

A correspondent in general practice writes:

As a former clinical clerk to the late Dr. James Collier, may I add a few words? He was, of course, primarily a neurologist, but he was also a very fine and extremely practical general physician. With regard to his special subject, his power of localizing the exact point in the brain or spinal cord where the lesion was situated from a consideration of the various symptoms present was wonderfully accurate, as in cases with a fatal issue the subsequent necropsy would show. As a lecturer he was always interesting and animated; indeed, it was impossible for the most lethargic student to be inattentive. As he warmed to his subject he would often forget the customary forty-five-minute time limit, but the extra teaching was always worth any sacrifice to listen to. Indeed, he had a very vague idea of time, and occasionally used to be a little trying to his house-physician and clerks by arriving an hour or two late. Many old St. George's men will retain vivid memories of his Monday demonstrations, first at Queen Square, then at St. George's, the patients being conveyed to and from Queen Square at his own expense. His ward teaching was equally striking. He was perhaps a little prone to exaggeration, which earned for him the soubriquet of "Truthful James." But his kindliness and anxiety to give the very best he could to his students will not readily be forgotten.

W. R. DAKIN, M.D., F.R.C.P.

Consulting Obstetric Physician to St. George's Hospital

The death of Dr. William Radford Dakin on February 8th, following an operation, removes one who up to the time of his retirement a generation ago was one of the outstanding figures among London consultants. Born in 1860, he was educated at Macclesfield and at Guy's Hospital, where he was in turn house-physician and obstetric resident. His quite unusual gifts were not rewarded by election to the visiting staff at his own hospital; but in 1891 he was elected to the obstetric staff at St. George's Hospital. Meanwhile he had been from 1885 to 1891 physician to the Royal Hospital for Women and Children, and from 1887 to 1891 obstetric physician to the Great Northern Hospital. He was also for many years physician to the York Road Lying-In Hospital.

In 1912 he retired from practice, as he thought for ever; but he joined the French Army during the war, where his surgical ability was soon detected and recognized by rapid promotion, as well as rewarded by the Legion of Honour and the Croix de Guerre. His intimate know-

ledge of the French language and his sympathies with the French people and with French art circles no doubt prompted him to place his skill at the disposal of France ; it is pleasant to think that the value of his services was so promptly appreciated, notwithstanding that he was a foreigner. Among his academic distinctions he was president of the Obstetrical Society of London, and examiner to the Royal Colleges of England and to the University of Oxford. He was the author of a highly successful textbook of obstetrics, which for years was a "best seller" among both students and practitioners ; he was often pressed to revise it for a second edition, and was always understood to be preparing materials for this—but nothing finally came of it. He retired from practice at the early age of 52, having accumulated all that he desired in the way of wealth ; and devoted himself to art and fishing, at both of which pursuits he possessed skill much beyond the ordinary. His water-colour paintings were far above usual amateur standards. Among the best known, as far as the public were concerned, were a series illustrating *The Flower of Gloucester* by his friend Temple Thurston, the novelist. Dakin married in 1892 Sylvia, daughter of Mr. F. T. Lewis ; there was no issue of the marriage.

A correspondent writes:

Dakin was one of those personalities to whom the cold statistics of academic attainments do very much less than justice. He was one of the handsomest men in the London of his day, with an athletic frame and bearing which made him look more like a cavalry leader than an obstetrician. Reserved in disposition, and rather taciturn in speech, he never wore his heart on his sleeve, but could be a most delightful host in his own home to his friends. He was a born surgeon, with the most complete mastery of his tools and an imperturbability due to his splendid technique. On one occasion, more than thirty years ago, when intestinal surgery had only quite recently extricated itself from contraptions such as Murphy's button and various other people's bone bobbins, Dakin, after removing an ovarian cyst, found himself confronted also by a previously unsuspected malignant growth of the sigmoid flexure. Without the least fuss he calmly demanded intestinal needles, and proceeded to excise the whole growth, and to anastomose the intestines, according to the very latest developments of surgical technique of the day, and did the whole operation certainly as well as, if not better than, any of his surgical colleagues could have done. How it was that he was familiar with this technique none of his assistants could understand, since he had been for twenty years a specialist in obstetrics and gynaecology. His practice in the former of these branches was enormous, so much so that when his fame as a gynaecological surgeon spread round London he found difficulty in cutting down the number of obstetric cases he had time for ; the story went that with this object he raised his fee from one hundred to two hundred guineas, only to be besieged by more would-be patients than he had had before. Be that as it may, he earned a princely income, but was so free from worldliness that it was a common event for patients to write that they had not yet received any account for operations, etc., a year or more previously, and that they would like to have the opportunity of getting out of his debt. He had settled in his mind a certain level of affluence beyond which he had no desire to rise ; and the moment his savings reached this mark he at once retired from practice and from London, to devote himself to his recreations, especially painting. Another feature of his character was his devotion to his aged mother, who for many years occupied a suite at the top of his house in Grosvenor Street. Though he never alluded to it, his friends were well aware that his childlessness was an abiding sorrow to him. During recent years he had been much crippled by arthritis, and was seldom seen in London.

As a teacher he was at his best in his celebrated textbook ; orally he had a delivery which was not always easy to follow. But to watch his work in the operating theatre was a liberal education to all his assistants. Never appearing to be in a hurry, he had yet such a mastery of his craft that he reduced unnecessary movements to a minimum, and it was always surprising to see in how short a time some complicated and difficult operation had been completed. His patients worshipped him, in spite of the air of aloofness in which he wrapped himself ; probably they recognized by instinct that this was a shell concealing a real kindness of heart.

FRANK WACHER, M.R.C.S.

Consulting Surgeon, Kent and Canterbury Hospital

The death of Dr. Frank Wacher, on February 12th, at the age of 85, has removed one of the most prominent personalities in the life of Canterbury for the last fifty years. Not only did he win innumerable friends by his devotion to his patients and his services to his colleagues, which extended far beyond the city boundaries, but his administrative ability found scope in so many directions with such happy results that he was recognized as a leader of public opinion who could be implicitly trusted.

He received his medical education at Guy's Hospital, and obtained the M.R.C.S. and L.S.A. in 1871. He steadily built up a large practice in Canterbury and the surrounding districts, and was for very many years medical officer to the local dispensary of the board of guardians. More than fifty years ago he became medical officer of health for the city, and after his retirement from medical practice continued to act in a consultative capacity. He was responsible for many improvements in sanitary hygiene, his kindly persuasive manner overcoming the objections which were only too common in those days when the new developments were far from popular in many quarters. His interest in the welfare of his poorer patients led him always to be a strong supporter of hospital development ; he was for long on the staff of the Kent and Canterbury Hospital, and an active agent in its extension. He took a keen interest in the progress of knowledge concerning infectious fevers, and held the post of medical officer to the Canterbury Sanatorium for Infectious Diseases. He was tuberculosis officer for some time, and with the establishment of the maternity and child welfare services found another field for his energies, both in administration and in clinical practice, at the Canterbury Maternity Hospital, the infant welfare centre, and the ante-natal and post-natal clinic. With the outbreak of war he became the friend and adviser of many of the officers of the R.A.M.C. stationed at hospitals in the city, and did all in his power to assist them in their work.

Dr. Wacher became a member of the British Medical Association in 1874, and thenceforward was active in its interests. He was vice-president of the South-Eastern Branch in 1906, and chairman of the Canterbury Division in 1912. For a quarter of a century he was chairman of the East Kent and Canterbury Conservative Club, and was vice-chairman of the local Conservative Association. As a recognition of the immense value of his varied public services he was accorded the Freedom of the City of Canterbury in 1927. It was typical of his outlook that he celebrated this occasion by presenting to the city a children's drinking fountain. His latter years were happily filled by expressions of gratitude of the community. He was accorded a civic funeral in the Cathedral, which was attended by great numbers of friends and of delegates from the many organizations which had owed so much to his inspiration and hard work.

MILNER MOORE, M.D.

Dr. Milner Moore, who died on February 9th at the age of 95, was born in London in 1839. His father was in practice in London, and was appointed Apothecary to the Household of King William IV in 1835. He attended Queen Adelaide in her confinements, and Dr. Milner Moore recently restored one of her baby's robes to the Royal Household, for which he received the thanks and a signed photograph of Queen Mary.

Milner Montgomery Moore was a student at St. Mary's, and qualified M.R.C.S. in 1863 and L.R.C.P. in 1864; he held at least three of the house appointments, including that of resident registrar. In 1880 he took the degree of M.D. at Durham University. Before settling down in Coventry in 1872 he was house-surgeon at Devonport and at the Lock Hospital, London, and surgeon to the Devonshire Hospital at Buxton. For twenty years he was one of the staff of the Coventry and Warwickshire Hospital, and eventually honorary consulting surgeon. He retired from practice and settled in Eastbourne in 1912. From his early days he took a keen interest in the politics of his profession, and especially in its ethical aspects. Its traditions appealed to him in a marked degree, and he played a distinguished part not only in his profession, but also in the general life of the community. For nearly fifty-five years he was a member of the British Medical Association, and a representative for many of those years. He was a member of the Finance Committee, but was even more interested in his activities on the Central Ethical Committee. Although he retired to Eastbourne in 1912 he was not content to rest, but continued his B.M.A. activities. Milner Moore was a popular member of the Eastbourne Medical Society, and was eventually elected an honorary member. With the late Dr. Ewart, he was founder of the Eastbourne Royal Eye Hospital, and for many years acted as its honorary secretary. In civic matters he was a leading member of the National Citizens' Union and a keen critic of local administration.

Although uncompromising when he considered it necessary, his colleagues and those who might differ from his opinion were always courteously treated by him, and much appreciated his sterling qualities. It may truly be said of Dr. Milner Moore that throughout his long career, even when he might have taken a well-earned rest, his constant concern was for the prestige and well-being of his and his father's profession, to which he was so deeply attached.

THE LATE MR. H. TYRRELL-GRAY

Mr. CYRIL NITCH writes: The death of Harry Tyrrell-Gray in the full tide of his work and at such a comparatively early age will be felt deeply by his many friends both of, and at, St. Thomas's. Always a frail and delicate man, but with an immense capacity for work and play, his popularity as a student depended in the main on his open-heartedness, his great sense of humour, and a sympathetic nature which invited friendship. When a house-surgeon, a post he filled with conspicuous success, his ability, determination, and untiring energy were very noticable. The writer can still see him walking along the corridor to one of the wards with two weary dressers at some unearthly hour of the night to attend to a case which could well have waited but which his high sense of duty would not permit him to leave until the morning. This characteristic, which persisted throughout his life, undoubtedly contributed to his early death, for his professional work always came first, and he was never happy unless he was convinced that he had done everything possible for his patients. In his early days he was a very fine pianist, and his facility for transposing music at sight was so remarkable that he could change the key several times when playing almost any accompaniment. As a surgeon his technique was as near perfection as possible, and his dexterity was such that it was a pleasure to watch him operate and to note the ease with which he overcame difficulties. He was a true disciple of Aesculapius in every sense of the term, and a very lovable man. He gave his life for his profession and his ideals, and he leaves behind him a great reputation and a big gap in the hearts of his many friends and patients.

We regret to record the death of Dr. JOSEPH O'MEARA, which took place suddenly at his residence in Wolverhampton, on February 4th. Born at Bruff, Co. Limerick, in March, 1874, he was the youngest of three brothers in the medical profession. Educated at Queen's College, Cork, and at Edinburgh, he obtained the Scottish triple qualification in 1896. He practised in Wolverhampton during the whole of his medical career. He is survived by his widow, two daughters, and three sons, one of whom is in the medical profession and is carrying on the practice. He was interred at Sedgley on February 7th, following Requiem Mass at SS. Mary and John's Church, Wolverhampton. Dr. O'Meara had been a member of the British Medical Association for very many years, and gave it his loyal support in every way. He was loved and respected by all his colleagues and by a wide circle of friends. He had built up a very large practice, to which he devoted all his time and energy. The profession is the poorer by the loss of a general practitioner of such sterling worth.

The death occurred on February 7th of Dr. PERCY GEORGE LEWIS, for many years one of Folkestone's most prominent and respected practitioners. The son of Dr. Henry Lewis of Folkestone, he was born in 1862, and received his medical education at King's College Hospital, where he was house-physician after qualifying M.R.C.S., L.R.C.P. in 1884. He later held the appointments of house-physician to the Royal Hospital for Diseases of the Chest and house-surgeon to the Salop and Royal South Hants Infirmaries. In 1889 he obtained the degree of M.D.Brux. and in the following year joined his father in the practice at Folkestone to which he afterwards succeeded. In addition to the strenuous work of general practice, Dr. Percy Lewis was for twenty years honorary surgeon to the Royal Victoria Hospital, and was on the consulting staff at the time of his death. He rendered valuable service to the hospital for many years, and up to the last was acutely interested in its fortunes. During the war he was a keen and indefatigable worker, and with others of the town's practitioners was instrumental in founding and running two war hospitals for the treatment of wounded soldiers too ill to be moved further. He was also specialist member of the neurological clinic of the local Pensions Board, in which post he showed that aptitude for, and love of, psychology, which was one of the prominent factors in his successful practice. After the war he was, at different times, president of the Kent Branch of the British Medical Association and of the Balneological and Climatological Section of the Royal Society of Medicine. Both of these offices, which he held with distinction, afforded him increased opportunity for that social intercourse and human contact which he loved and for which he was so well fitted, for, indeed, he was "one who loved his fellow men." His life was one of unremitting service and industry, but he found time to write several books and papers on the subjects in which he was particularly interested. His *Nursing: Its Theory and Practice* ran to nineteen editions, while other works dealt with the relief and cure of spinal curvatures; early scoliosis; medical exercises; medical aspects of education; the care and management of delicate children; and several shorter papers. A colleague writes: Percy Lewis possessed a peculiarly lovable character, and had in marked degree the happy faculty of inspiring the deep and lasting affection of his friends and patients. A keen sense of humour and a cheerful and optimistic outlook, coupled with much clinical acumen, rendered him particularly well fitted for his life's work. He admired wisdom rather than brilliance, and was a man of sound judgement and common sense. He, more than most, deserved the titles "Wise Councillor, Beloved Physician," and his loss will be felt over a wider field than the circle of his own town.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

The House of Commons, on February 19th, began discussion of the Government of India Bill in committee, for which thirty days in all have been allocated.

The Royal Assent was given, on February 15th, to the Unemployment Assistance (Temporary Provisions) Act.

The superannuation money resolution was agreed to in the House of Commons on February 15th, and passed the report stage on February 18th.

The Unemployment Insurance Bill was read a third time in the House of Lords on February 19th, and passed.

The Regimental Charitable Funds Bill passed through committee in the House of Lords on February 19th.

Vaccinations

Replying to Mr. Groves on February 14th, Sir HILTON YOUNG gave particulars concerning vaccination as follows:

I.—*Number of Public Vaccinations and Revaccinations*

Year ended September 30th	Number of Successful Primary Vaccinations	Number of Successful Revaccinations
1928	320,687	163,918
1929	258,986	104,397
1930	234,970	49,278
1931	219,148	18,253
1932	207,543	16,624

II.—*Expenditure of Local Authorities on Vaccination from the Rates and from Government Grants Respectively*

Year	Government Grants	Rates*
	£	£
1928–29	10,522	181,137
1929–30	7,100	173,719
1930–31	242	141,107
1931–32	—	146,714
1932–33	—	136,365

* As from April 1st, 1930, the Government grants in respect of vaccination formerly paid through the Exchequer Contribution Accounts of County and County Borough Councils ceased to be payable, and the expenditure shown in this column fell on the general funds of the authorities, consisting mainly of rates and the block grants made under the Local Government Act, 1929.

III.—*Expenditure on the Government Lymph Establishment*

Year	Gross cost	Net Cost after Deduction of Receipts.
	£	£
1928–29	15,377	11,598
1929–30	15,078	12,944
1930–31	18,766	11,309
1931–32	13,350	11,049
1932–33	14,437	12,583

Sir Hilton Young also said that there was no instruction to public vaccinators under contract which directed a public vaccinator to call on a parent who had been convicted and fined under the Vaccination Act and offer to vaccinate the child in question, but such a visit would not contravene the law. Twenty-four hours' notice was required only before the visit which the public vaccinator was directed to pay under Section 1 (3) of the Vaccination Act, 1898. Visits which were made voluntarily were subject to no rules.

Mr. HACKING told Mr. Groves on February 14th that during the last ten years the proportion of Army recruits accepted for service showing no marks of vaccination was approximately 24 per cent. Records were kept by Army medical officers showing the results of the vaccination of recruits, and whether the vaccination was a primary one or a revaccination. Similar records were kept for the Navy, except that for entrants to the dockyards the record did not distinguish between primary vaccinations and revaccinations.

"Talking Books" for the Blind

On February 15th Sir KINGSLEY WOOD moved the second reading of the Post Office (Amendment) Bill. Sir I. FRASER said that within recent months the developments in broadcasting and electrical recording had made it possible to conceive of the setting up of a library of "talking books" for the blind. The researches of St. Dunstan's and the National Institute for the Blind, aided by some of the great companies concerned with sound production, had led to a position in which, within a few weeks, it would be practicable to set up a library of records on which speech had been impressed so effectively that the "books" could be read aloud by suitable machines to the blind people in their own homes. Very shortly blind people would be able to have a machine similar perhaps to a gramophone or a small talking machine, which would read aloud for a substantial period. One method involved the use of a disk like a gramophone record, on which the reading-matter would run for something like thirty or forty minutes on one side, so that a whole novel might be recorded on as few as eight gramophone records. He asked the Postmaster-General to accept an amendment in committee making it possible for books of recorded speech to be sent at special rates to blind persons. Sir E. BENNETT, in reply, said that the Postmaster-General was prepared to agree to the principle of Sir I. Fraser's proposal.

The Bill was read a second time.

Refuse Dumps

On February 18th Sir C. RAWSON asked the Minister of Health if he had considered the protest sent from 2,000 ratepayers in Shrewsbury against proposals to dump refuse on a site between two good-class residential districts on the banks of the Severn alongside a public footpath used by thousands of persons daily, including school children. Mr. SHAKESPEARE replied that a public local inquiry with reference to this proposal had been held by one of the inspectors of the Ministry, at which full opportunity was given to the opposition to state their case. The inspector's report was now being considered.

Housing Bill in Committee

The Standing Committee of the House of Commons, on February 19th, resumed consideration of the Housing Bill. On Clause 1, which lays on local authorities the duty of surveying the housing conditions in their areas with respect to overcrowding, and submitting their proposals to the Minister of Health, Sir P. HARRIS asked if it was proposed to specify the time within which local authorities must complete their survey. Sir HILTON YOUNG said it was necessary that there should be a proper measure of elasticity in this matter. The dates for submitting schemes could not be specified before the surveys were complete.

The clause was ordered to stand part of the Bill.

On Clause 2, which defines overcrowding, Mr. GREENWOOD moved an amendment to the effect that the definition should make it clear that no occupant of a house should normally have to sleep in a living room. Sir FRANCIS FREMANTLE said that the committee would sympathize with the ideal expressed in the amendment, but Mr. GREENWOOD replied that he was not trying to establish an ideal; he was suggesting that Parliament should declare that a house was overcrowded if persons had to sleep in living rooms. Sir FRANCIS FREMANTLE, continuing, said that the proposal was at least a step towards the ideal. He agreed that sleeping in living rooms ought not to be encouraged. But, he said, many people were accustomed to sleep in living rooms, and Parliament was now fixing a standard to deal with overcrowding. Sir HILTON YOUNG stated that they had to consider what was the best standard that could be imposed on the country as a whole without risk of the Bill breaking down as the result of specifying a standard beyond attainment. The standard in the Bill had been decided after prolonged consultation with local authorities and their officers all over the country.

The amendment was rejected by 32 votes to 7, and the clause ordered to stand part of the Bill.

The committee adjourned until February 21st.

Rabies and the Quarantine Period.—Dr. ELLIOT, replying on February 12th to Captain Cunningham-Reid, said that five years had elapsed since the last case of rabies in dogs imported into this country from Europe, and four and three-quarter years since the last case in dogs from other parts of the world. He was not prepared to reduce the period of six months' quarantine, which experience had shown to be necessary. Since 1919 twelve dogs imported from abroad had

developed rabies while in quarantine, four of them between the fourth and six months of detention.

Defectives and Criminal Lunatics in Perth Prison.—Sir GODFREY COLLINS, replying to Mr. Neil Maclean on February 12th, said that the question of providing a criminal lunatic asylum and a State institution for defectives elsewhere than at Perth Prison was receiving his active consideration. Legislation would be required before expenditure could be incurred on a scheme of this nature. The condition of some of the old quarters at Perth was unsatisfactory, but the buildings were not suitable for reconstruction.

Safety Glass in Motor Vehicles.—Mr. HORE-BELISHA told Sir William Davison, on February 13th, that regulations made in 1931 provided that all motor vehicles registered on or before January 1st, 1932, should be fitted with safety glass on all windows and windscreens facing to the front by January 1st, 1937, and as the industry had been informed that it would have until this date to make these expensive alterations he did not feel justified in altering the arrangement. Side windows were less liable to fracture in an accident than front ones, and the regulations did not require safety glass to be fitted to these, ordinary glass being more easily breakable to release passengers if the doors became jammed in an accident.

Anthrax from Goats' Hair.—In reply to Sir Francis Fremantle, on February 13th, Sir JOHN GILMOUR said he was aware of the danger of infection with anthrax from imported goats' hair. The question of extending the present arrangements for disinfection of goats' hair had for some time engaged his close attention. Representations from the Bradford Chamber of Commerce on points of detail were now under consideration.

Animal Experiments with Curare.—Sir JOHN GILMOUR told Mr. Groves, on February 14th, that during 1934 thirty-seven experiments involving the use of curare were performed on living animals under permissions given by the Secretary of State. Seven of these experiments were performed on deeply anaesthetized animals, while the remaining thirty consisted of injections only, no cutting operation being involved.

Deaths from Abortion in 1933.—Replying to Viscountess Astor, on February 14th, Sir HILTON YOUNG said that the total of 2,618 cases of maternal mortality in England and Wales in 1933 (deaths classified to pregnancy and childbearing) comprised 378 deaths attributable to abortion (including miscarriage), there being 257 classified to post-abortive sepsis and 121 classified to abortion not returned as septic. There were, in addition, ninety-seven deaths not classified to puerperal causes but returned as associated with abortion or miscarriage, and eighty-five classified to criminal abortion on a coroner's certificate.

Nursery Schools on New Housing Estates.—Mr. RAMSBOTHAM told Viscountess Astor, on February 14th, that the provision of nursery schools on new housing estates, where housing conditions were presumably satisfactory, was less urgent than their provision in areas where housing conditions were seriously defective. He was prepared to consider on their merits proposals for the provision of nursery schools on new housing estates where the inhabitants had previously been living under specially bad conditions, and where consequently social conditions might be particularly unfavourable.

Defence Against Gas Attack.—Mr. MANDER, on February 19th, asked the Prime Minister whether the Women's Legion new movement to assist in the organization of help to the public in case of enemy gas attacks under the Red Cross and St. John Ambulance Societies was approved, encouraged, or supported by the War Office. Mr. MACDONALD replied that he was informed that the War Office and other departments were sympathetic in principle to the movement, and that the subject was now being discussed by the three Defence Departments. He understood that full particulars of the movement were announced in a letter to the *Times* on January 25th. Mr. MacDonald also told Mr. Mander that no experiments had been carried out in the East End of London by the Home Office or any other Government Department as to the best means of making dwelling-houses proof against aerial gas attack.

River Pollution.—On February 19th Mr. SKELTON informed Mr. Burnett that the Scottish Advisory Committee on the Prevention of River Pollution was proceeding with its investigations. He understood that the committee was at present examining the condition of particular rivers, and when that programme was complete it proposed to submit a comprehensive report on the prevention of river pollution.

Scottish Representation on Ophthalmic Benefit Committee.—On February 19th Mr. BURNETT asked the Minister of Health if the names of the Ophthalmic Benefit Joint Committee had been lodged with him, and, if so, whether representation had been given to the Scottish Association of Opticians as the only examining optical body in Scotland. Mr. SHAKESPEARE replied that the Ophthalmic Benefit Committee was a non-statutory and unofficial body, and the Minister was not responsible for its constitution. A copy of a recent report of the committee, in which a list of the members was given, had, however, been sent to the Minister, and from this it appeared that direct representation on the committee had not been accorded to the Scottish Association of Opticians.

Deaths under Anaesthetics.—Sir HILTON YOUNG informed Mr. McEntee on February 19th that there were 730 deaths under, or associated with, anaesthesia in England and Wales in 1929, and 707 in 1930. In 1931 there were 723 deaths; in 1932, 749; and in 1933, 768, making a total of 3,677.

Notes in Brief

Dr. Elliot states that he is informed by the Milk Marketing Board that there has been no surplus of milk in excess of domestic and commercial requirements, and that all milk handled by the Board during the past year was, in fact, marketed.

On January 31st, 1935, 250 areas had been declared to be clearance areas by Welsh local authorities. These areas include 1,909 houses, and involve the displacement of 7,344 persons.

Universities and Colleges

UNIVERSITY OF OXFORD

Approval was given in Congregation, on February 12th, to the setting up of a museum of the history of science, with Dr. R. T. Gunther as its first curator.

UNIVERSITY OF MANCHESTER

Dr. Donal Sheehan has been appointed as lecturer in neuro-anatomy.

The following representatives of the University on the governing bodies of outside institutions have been appointed: Professor H. S. Raper, F.R.S., St. Anselm Hall; Mr. Philip Godlee, Manchester Medical Society Council.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

An ordinary Council meeting was held on February 14th, when the acting President, Mr. Wilfred Trotter, was in the chair.

A letter was read from Major-General C. A. Sprawson, Director-General of the Indian Medical Service, asking the College to conduct a primary examination for the Fellowship in India at the end of 1935. It was decided to hold an examination in Calcutta in December.

A diploma of Fellowship was granted to H. L. Cleave.

It was reported that, at the primary examination for the Fellowship, concluded on January 2nd, at Madras, the following twenty-one candidates were successful:

D. S. Ayyar, P. K. Chanmugam, K. K. Ghosh, S. K. Ghosh, S. C. Gupta, P. S. Janardhanan, T. D. V. Krishnan, K. G. Krishnaswami, R. Mahadevar, C. K. P. Menon, K. K. C. Nambiar, N. S. Narasimhan, R. T. K. Nayar, H. R. Pasricha, C. Raghavachari, C. Raman, K. N. Rao, I. U. Shahab, F. A. B. Sheppard, R. Srinivasan, S. P. Srivastava.

Diplomas

Diplomas of Membership were granted to G. G. W. Elwell, V. R. Ginde, G. E. Hughes, Bertha Marston, and A. S. R. Sinton, who were successful at the final examination of the Conjoint Board concluded on February 4th; and to 117 candidates whose names were given in the report of the meeting of the Royal College of Physicians of London, published in the *Journal* of February 9th at page 283.

The names of the nine candidates on whom a diploma in Public Health, jointly with the Royal College of Physicians, was conferred were also published in that report.

A diploma in Medical Radiology was granted, jointly with the Royal College of Physicians, to R. G. Hutchison.

It was decided that all applications for examinerships shall be required to reach the secretary at least ten days before the meeting of the Council preceding that on which the election is to be made.

On the recommendation of the Joint Consultative Committee it was decided that the College should oppose the Osteopaths Bill in conjunction with the Royal College of Physicians, and that witnesses should be appointed to appear before the Select Committee of the House of Lords and give evidence. It was also decided that counsel be employed to act jointly on behalf of the two Royal Colleges.

It was reported that an election of three Fellows into the Council will take place on July 4th, at 11 a.m., in the vacancies occasioned by the retirement in rotation of Sir Cuthbert Wallace, Mr. Leonard Gamgee, and Mr. L. R. Braithwaite; that notice of the election will be given to the Fellows by advertisement and by circular on March 8th; that March 18th will be the last day for the nomination of candidates; and that a voting paper will be sent on April 2nd to every Fellow of the College whose address is registered at the College.

Medical News

The Hunterian Oration will be delivered before the Hunterian Society at the Mansion House on Monday, February 25th, at 9 p.m., by Professor John Eyre, M.D. His subject will be "Undulant Fever—A Retrospect."

The 161st anniversary dinner of the Medical Society of London will be held at Claridges Restaurant on Friday, March 8th, at 7.45 p.m.

Three lectures, illustrated by lantern slides, will be given under the Shaw Trust on Monday evenings, February 25th, March 4th, and March 11th, at 8 o'clock, at the Royal Society of Arts (John Street, Adelphi, W.C.). The first lecture, by Mr. D. R. Wilson (H.M. Chief Inspector of Factories), will deal with factory accidents—their prevalence, distribution, and causation; the second, by Mr. G. Stevenson Taylor (H.M. Deputy Chief Inspector of Factories), will deal with the principal causes of factory accidents; and the third, by Mr. Leonard Ward (H.M. Deputy Chief Inspector of Factories), with measures for prevention.

A meeting of the Medico-Legal Society will be held at 11, Chandos Street, W., on Thursday, February 28th, at 8.30 p.m., when a paper will be read by Major G. Burrard on "The Identification of Firearms in Murder Cases by Microscopical Examination of Fired Bullets and Cartridge Cases." A discussion will follow.

A meeting of the medical section of the British Psychological Society will be held at the Institute of Medical Psychology, Malet Place, W.C.1, on Wednesday, February 27th, at 8.30 p.m., when Professor W. Mayer-Gross will read a paper on "Depersonalization."

The annual meeting of the Industrial Health Education Society will be held, by invitation of Lord and Lady Luke, at 29, Portman Square, W., on Monday, March 4th, at 5 p.m. The speakers are Lord Horder, Sir Ernest Graham-Little, M.P., and Mr. George Hicks, M.P.

A joint meeting of the Food Group and the Yorkshire Section of the Society of Chemical Industry will be held at Leeds on Monday, March 4th, when there will be a discussion on "Physiological Aspects of Additions to Foodstuffs." The speakers will be Dr. A. S. G. Huggett, Dr. J. T. Irving, and Dr. A. Wormall.

The next quarterly meeting of the Royal Medico-Psychological Association will be held at 11, Chandos Street, W., on Thursday, February 28th, at 2 p.m. At 3 p.m. the same day the sixteenth Maudsley Lecture will be delivered by Dr. Lewis C. Bruce in the Barnes Hall at 1, Wimpole Street, W. The title of the lecture is "Observations on the Physical Symptoms of Acute Confusional Insanity." Admission without ticket.

A sessional meeting of the Royal Sanitary Institute will be held in the Council House, Walsall, on Friday and Saturday, March 1st and 2nd, in conjunction with the Midland Branch of the Society of Medical Officers of Health. The members will be received at 4.30 p.m. on March 1st by the mayor, and entertained to tea; and a discussion, on "The Housing Act, 1930: Promise and Performance," will be opened by Mr. C. A. Stansbury. On March 2nd, at 10 a.m., Mr. C. N. Graddon will open a discussion on "Present Tendencies in Public Cleansing."

A public meeting, arranged by the North Kensington Women's Welfare Centre, on "The Nation's Responsibility for Maternal Health," will be held at Kensington Town Hall on Thursday, February 28th, at 5.30 p.m. The speakers will include Dame Janet Campbell, Dr. C. Killick Millard, and Lord Hanworth. Admission free.

Instruction to post-graduates and medical students in the theory and practice of contraception will be given at the North Kensington Women's Welfare Centre (12, Telford Road, Ladbroke Grove, W.10) during the next five months. Particulars may be had from the secretary.

The annual meeting of the French Society of Hydrology and Climatology will be held in Paris on March 14th, when the following papers will be read: indications for, and results of, heliotherapy, by M. Jules Renaud; problems of marine heliotherapy, by M. Cattier; heliotherapy at high altitudes, by M. Paillet; the relations of the liver and intestines in pathology, by Professor Chabrol; and entero-hepatic syndromes and their hydromineral treatment, by MM. Binet and Baumann. Further information can be obtained from the general secretary, Dr. Serane, 40, Rue Jasmin, Paris, XVIe.

A series of post-graduate lectures began at Ancoats Hospital, Manchester, on February 21st, and will be continued on Thursdays, at 4.15 p.m., to April 11th inclusive.

A post-graduate course on internal medicine, with special reference to gastro-intestinal ailments, will be arranged in Berlin from March 4th to 9th, and another on disturbances of metabolism and of the glands of internal secretion, from March 11th to 16th. The fees are RM. 40 for each course, and RM. 60 for both courses together. The programme is obtainable from the office of the Berlin Academy for Medical Post-Graduate Training, Berlin, N.W. 7, Robert Koch-Platz 7 (Kaiserin Friedrich-Haus).

The Fellowship of Medicine (1, Wimpole Street, W.) announces that demonstrations will be given at the Wellcome Museum of Medical Science on February 28th, at 3 p.m., by Dr. W. Smith, on tuberculosis, and on March 7th, at 3 p.m., by Mr. Percival Cole, on tumours of the bone. Forthcoming week-end courses include: Princess Elizabeth of York Hospital for Children, March 2nd and 3rd; clinical surgery, at the Royal Albert Dock Hospital, March 9th and 10th; chest diseases, at the Brompton Hospital, March 23rd and 24th. All-day courses for longer periods include: orthopaedics, at the Royal National Orthopaedic Hospital, March 11th to 23rd; clinical medicine and surgery, at the National Temperance Hospital, March 14th to 26th (including the Saturday and Sunday); a special thoracic surgery course, at the Brompton Hospital, March 4th to 29th, occupying three days in each week, and intended for practitioners who may in the ordinary course of their work be called upon to perform chest operations. A special demonstration in children's diseases will be given by Dr. K. H. Tallerman, at the London Hospital, on March 9th, at 3 p.m. Courses, lectures, demonstrations, etc., arranged by the Fellowship are open only to members and associates.

The Lady Tata Memorial Trustees invite applications, by April 15th, for scholarships of £400 per annum each for research work in diseases of the blood, with special reference to the leukaemias. There are in all eight of these Lady Tata research scholarships, which are renewable annually up to a normal maximum of three years, and there are likely to be at least two vacancies for new candidates ready to begin work in October. The scholarships are open to suitably qualified men or women of any nationality, and are ordinarily awarded on a whole-time basis. Further particulars and forms of application may be obtained from the secretary, Scientific Advisory Committee, 138, Bedford Court Mansions, London, W.C.1.

Two of the scholarships founded by Sir Milsom Rees, of £100 per annum each, for the sons of medical men, will be awarded after a simple examination next month. Candidates must be under 9 years of age at the time of competing, and the scholarships are normally tenable till the holder leaves Port Regis Preparatory School, Broadstairs, Kent. Applications should be sent immediately to the head master, from whom full particulars may be obtained.

The second international Congress of Stomatology will be held at Bologna from April 14th to 19th. The subscription is 80 lire. Further information can be obtained from the secretary of the congress, Via San Vitale 50.

The cholera situation in 1934 has been summed up in the November–December issue of the Epidemiological Report of the Health Section of the League of Nations as follows: summer epidemic wave in the Ganges Valley, which did not reach the level of 1930; considerable epidemic in the Central Provinces and moderate prevalence in the remainder of the India peninsula; sporadic cases in the valleys of the Mekong and Menam; extinction of the epidemic in the Philippine Islands; and almost complete absence of cholera in China.

In our issue of January 19th (p. 112) we announced the programme of the International Neurological Congress to be held in London from July 29th to August 2nd next. Further particulars will be found in the January issue of the *Journal of Neurology and Psychopathology*. The secretary-general of the congress is Dr. S. A. Kinnier Wilson (14, Harley Street, W.1).

The issue of the *Wiener klinische Wochenschrift* of February 8th, and of the *Wiener medizinische Wochenschrift* of February 9th, are dedicated to Hofrat Dr. Gustav Riehl, emeritus professor of dermatology in the University of Vienna, on the occasion of his eightieth birthday on February 10th.

The issue of the *Chinese Medical Journal* for December is devoted to the memory of Dr. Davidson Black, professor of anatomy at Peiping Medical College.

The issue of the *Irish Journal of Medical Science* which commemorates the bi-centenary of the foundation of Mercer's Hospital, Dublin, contains articles by Dr. R. P. Kirkpatrick, Dr. R. H. Keating, Sir John Lumsden, and Dr. Robert J. Rowlette, dealing with the past and future of the hospital.

The recently published issue of the *Bulletin de l'Office International d'Hygiène Publique* for December, which is devoted to yellow fever, contains articles by Colonel S. P. James, Dr. E. D. Pridie, Inspector-General Boyé, Professor Ricardo Jorge, and Dr. E. van Campenhout.

In the Calcutta Criminal Court, on February 16th, two of the four men charged with conspiracy to murder a rich Indian landowner, by injecting him with plague bacilli from a research laboratory, were found guilty and sentenced to death. They are Benayendra Nath Pandey, step-brother of the murdered man, and Dr. Taranath Bhattacharya. The two other accused persons, Dr. D. R. Dhar and Dr. S. P. Bhattacharya, were acquitted.

The Académie des Sciences of Paris has recently awarded the Jean Dagnan-Bouveret prize of 15,000 francs to Drs. Auguste Charles Marie and Paul Remlinger for their work on rabies, and the Lacage prize of 10,000 francs to Professor Portier for his physiological studies.

Professor Jacques Parisot of Nancy has been appointed in the place of the late Professor Léon Bernard as a member of the Health Committee of the League of Nations.

The oldest man in Russia, Iwan Maschupin, whose age was certified to be 123, has recently died of an infectious disease in a Moscow clinic. His vision, hearing, and memory had been very good up to the end. Up to three years ago he had been a farm labourer. He had never drunk nor smoked.

An institute of experimental surgery has recently been inaugurated at the Medical Faculty of Buenos Aires, under the direction of Dr. Guillermo Bosch-Ayana, professor of operative medicine.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed **to The EDITOR, British Medical Journal, B.M.A. House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs. Authors over-seas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBER** of the British Medical Association and the *British Medical Journal* is EUSTON 2111 (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are:
EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Medisecra Westcent, London.*

The address of the Irish Office of the British Medical Association is 18, Kildare Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 24361 Edinburgh).

QUERIES AND ANSWERS

Treatment of Cramp

"W." would be glad to know of any treatment to help a patient who suffers from cramp, in arms, legs, abdominal muscle, intercostals, fingers, etc., to an unusual degree—no organic disease discovered.

Vascular Exudates

"Optic" writes: I would be grateful for any information upon this condition of vascular exudates in the vitreous occurring in a middle-aged man with diabetic retinitis under insulin treatment. They occur almost daily—jet black—and take about a quarter of an hour to settle down, some remaining permanently as a cloud in the visual axis. As I am ignorant of their cause, apart from strain increasing them, I cannot advise any treatment.

Buccal Ulcers

Dr. J. F. REY writes in reply to "J. B. J." (February 9th, p. 288): One of the simplest and most effective means of treating buccal ulcers is to touch all painful areas every three or four hours with a crystal of pure copper sulphate before the actual onset of the ulcer; when the ulcer is present it will heal it quickly if applied once or twice a day.

"E. O'F." writes: If "J. B. J." will use pieces of cotton-wool wetted with glycothymolin, to which is added pure carbolic 8 grains to ʒi, and press these to ulcers and keep in mouth, changing frequently, the ulcers will soon disappear.

Diphtheria Carriers

Dr. W. G. HARNETT (Barnet) writes in reply to "P. G. D.": Many of these cases are sent into the isolation hospital. I find the best method of dealing with them is to have a virulence test carried out, and if the result is positive make an autogenous vaccine; after the sixth dose the swabs are usually negative. The patient is then discharged from hospital, and attends as an out-patient for the remaining doses of the vaccine. After many years of various local treatments I find the above method far the most satisfactory.

"New Cars for Old"

MANN EGERTON AND CO. LTD., consulting engineers to the Medical Insurance Agency, write: We can unhesitatingly support the opinion expressed by "Annual Change" (February 16th, p. 344), based on the experience of a large proportion of our clientele who have adopted the idea with satisfactory results. We can augment the opinion given by your correspondent, which may be helpful to others who may be considering a yearly change of cars. (1) The annual cost on leading makes, particularly with saloon coachwork, will usually work out at a sum equivalent to 33½ per cent. of the list price of the car selected; this calculation is based on a mileage of between 12,000 and 15,000 miles, and a car

maintained in reasonable condition. Insurance is transferable, and a refund of taxation can be obtained of any surplus remaining at the date of exchange. (2) It is not necessary to continue with the same make, but a stipulation is usually made that the car to be purchased after the first year and any subsequent years should be of approximately equivalent value. (3) We believe that a yearly change is economical at 12,000 miles or over, for, in certain districts where running conditions are bad, tyre and other replacements may easily be necessary before the 15,000 mile mark is reached. (4) Apart from the expense, too much stress cannot be laid on the inconvenience to which a doctor is put if his car has to be repaired or renovated. Except where (as is our own practice) a fleet of really smart cars is maintained specially for loan, borrowing a car during the repair period is liable to be unsatisfactory, and, furthermore, it is not always possible to arrange this at a moment's notice. (5) Although the manufacturer's guarantee in all cases, with the exception of a few high-grade makes, has now been reduced to six months, it is practically certain that any good make will do twelve months' hard work without trouble of any kind, providing the owner sees that it has proper maintenance. (6) On the principle that "nothing succeeds like success," the possession of a well-kept up-to-date car must create a favourable impression. (7) The yearly change can be combined with hire purchase, so that extra capital is not involved. (8) Any doctor entering into any such scheme must satisfy himself that the contract is definitely binding only on the firm negotiating the transaction. He must be free to cancel the arrangement if for any reason circumstances prevent the expenditure at the expiration of the first year or any subsequent years.

Income Tax

Sundry Earnings

"PROBLEM" gives details of his earnings for various periods, and inquires as to his position.

*** January to October, 1934, £211 − £8 = £203. Assuming the earnings spread equally, one-third—that is, £68—would fall into the financial year 1933–4, and for that year "Problem" is exempt. (2) November, 1934, onwards, at £200 per annum. The earnings for the financial year 1934–5 would be two-thirds of £203 = £135 plus five-twelfths of £200 = £83—that is, £218 in all. Against this he can deduct a reasonable amount for the total depreciation and tax and insurance of his car (allowing for private use), professional subscriptions, and life assurance. *Income Tax and the Professional Man*, published at 4s. 6d. by Crosby, Lockwood and Son, Stationers' Hall Court, E.C.4, is a useful little handbook. Possibly our correspondent's best course is to call at the office of the local inspector of taxes and agree the figures with him.

Use of Partner's Residence

"R." and his partner live at opposite ends of the town; the bulk of the professional work is done at or from a central surgery. The residences are used to some extent—for example, cases are received there "by telephone and hand," the cars are garaged there, and drugs and appliances are available there and used from time to time. No separate room is set aside at either residence for professional work. Hitherto one-third of the general expenses have been allowed, but it is now contended that no allowance is due.

*** We do not agree. The one-third allowance was probably somewhat generous, but *some* deduction is due for the use of the premises professionally. It is not possible to lay down any general rule in such cases, but on the facts a deduction of one-sixth would seem a reasonable compromise.

Expense of Locumtenent and Repairing Garage

"A. G." asks whether the cost of a locum and his keep during illness are allowable where partly met out of sickness insurance, and also whether the cost of rethatching the garage is allowable.

*** The cost of a locumtenent during illness is allowable, and the amount received from the sickness insurance need not be deducted from the cost. (It would be otherwise if the payment of the premium had been allowed in the past.) The cost of rethatching the garage is allowable—the proportion of rent allowance is presumably based on pure rent payment, and would not include the additional expense of repairs, etc., falling on the tenant.

LETTERS, NOTES, ETC.

The Case of Dr. Germani

Miss SYLVIA PANKHURST (Woodford Green) writes: A year ago a plea reached me from the relatives of one of the Italian political internees on the Island of Ponza that the inhabitants of the island, both the internees and the fishermen and their families who live there, were without adequate medical aid. Many deaths had resulted in consequence. It was repeated to me that Dr. Mario Germani, a highly skilled physician and surgeon, well known for his researches in Paris, Vienna, and Berlin, as well as in Rome, was among the political internees, and would be able to give his services in all grave cases of illness on the island if the necessary equipment were provided. On behalf of the Women's International Matteotti Committee, I issued a plea for such aid to the Press, and, in response to it, a very fine case of surgical instruments, capable of dealing with all operations, including those connected with midwifery, as well as various medical requisites, were provided, mainly by doctors of the British medical profession. I wrote to the Italian Embassy in London and asked them if there would be any obstacle to these instruments being sent to Dr. Germani and used by him, and I was informed that there was nothing to prevent the parcel going in the ordinary way. I dispatched the parcel to Mrs. Germani, who was permitted to visit her husband last summer, and she took it with her. The instruments could not have reached Dr. Germani, and could not have been used by him without the knowledge and connivance of the authorities on Ponza. I now learn that Dr. Germani is being prosecuted by the Italian Government for practising as a physician and surgeon without belonging to the Fascist Medical Corporation. It must be added that membership of that body has been made a pre-requisite of permission to practise medicine and surgery in Italy, but Dr. Germani, as an anti-Fascist, like all others not approved as favourable to the regime, would, in any event, be excluded from this Corporation. I request the hospitality of your columns to protest against the gross unfairness and cruelty of this act of persecution, a protest with which I feel sure the entire medical profession of this country will be heartily in agreement. To those who are not aware of the case, it is well to explain that Dr. Germani was sent for ten years to the Island of Ponza because he returned to Italy from abroad with the alleged intention of assisting Mrs. Matteotti, the widow of the murdered Italian deputy of that name, to leave Italy with her children.

An Anti-fog Device

"SAFETY FIRST" writes: Having tried many anti-fog devices which proved useless, particularly those depending on the emission of an amber light, I have at last discovered one which enables me to drive at 20 miles per hour in all but the densest fogs. The Bosch Nebellampe N.E.120 is designed to make use of the fact that fog does not actually touch the ground, but lies about one foot above it. This light, fitted on the dumb-iron, sheds a horizontal ray of light which illuminates both curbs and for a distance of about thirty feet in front. There is little glare, as the light is concentrated on the ground, so there is no necessity for "dipping"; moreover, the light is a valuable substitute for, or auxiliary to the head-light.

Glaxo Laboratories (56, Osnaburgh Street, London, N.W.1) have issued for members of the medical profession a pamphlet on the uses of their "adexolin" concentrates of vitamins A and D in the prophylaxis and treatment of disease.

Hanovia Ltd. (of Slough), makers of sunlamps, have acquired new and more extensive showrooms at 3, Victoria Street, London, S.W.1, where visits by members of the medical profession are welcomed at any time.

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 50, 51, 52, 53, 54, 55, 58, and 59 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 56 and 57.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 76.